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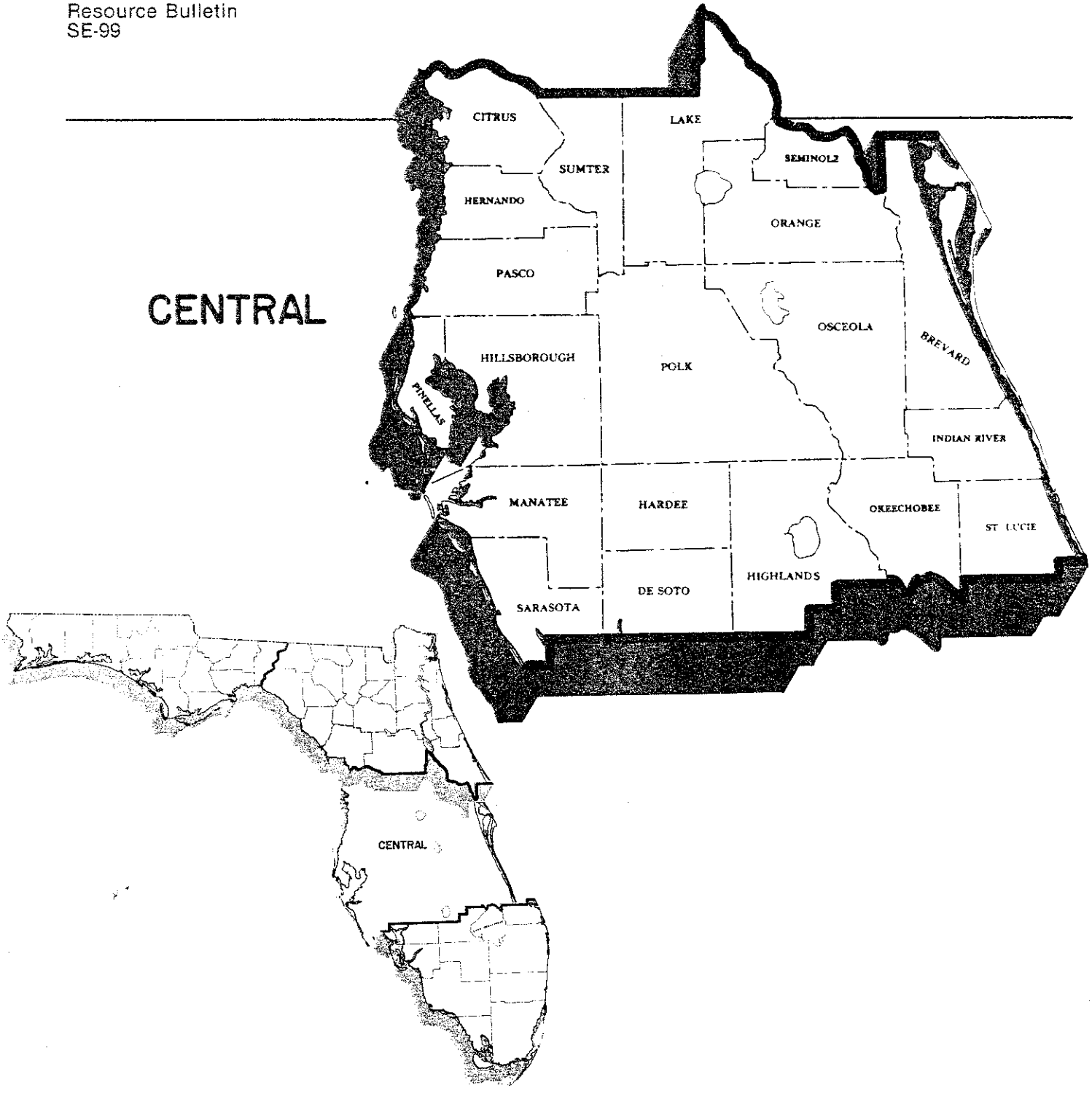
Forest Statistics for Central Florida, 1988

Mark J. Brown



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P.O. Box 2680
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Forest Statistics for Central Florida, 1988

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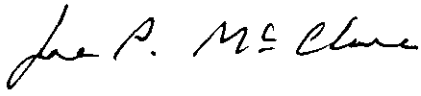
Foreword

This report highlights the principal findings of the sixth forest survey of Central Florida. Field work began in July 1987 and was completed in September 1987. Five previous surveys, completed in 1936, 1949, 1959, 1970, and 1980, provide statistics for measuring changes and trends over the past 52 years. The primary emphasis in this report is on the changes and trends since 1980. Previously reported figures have been adjusted to provide the best estimate of change.

Periodic surveys of the forest resource are authorized by the Forest and Rangeland Renewable Resources Research Act of 1978. These surveys are a continuing, nationwide undertaking by the Regional Experiment Stations of the USDA Forest Service. In Florida, Georgia, North Carolina, South Carolina, and Virginia, these surveys are administered by the Forest Inventory and Analysis (Forest Survey) Research Unit at the Southeastern Forest Experiment Station, with headquarters in Asheville, NC. The primary objective of the survey is to periodically inventory and evaluate all forest and related resources. These multiresource data help provide a basis for formulating forest policies and programs and for the orderly development and use of the resources. This report deals only with the extent and condition of forest land, associated timber volumes, and rates of timber growth and removals.

The 20-county area covered by this report is one of four Survey Units in Florida. Similar reports, USDA Forest Service Resource Bulletins SE-96 and SE-97, have been issued for Northwest and Northeast Florida. A comparable report for South Florida will be issued as the statewide inventory progresses. When completed, the inventory will provide updated statistics on the timber resource for all of Florida.

The Southeastern Station gratefully acknowledges the cooperation and assistance provided by the Division of Forestry, Florida Department of Agriculture and Consumer Services in collecting field data. Appreciation is also expressed for the excellent cooperation of other public agencies, forest industry, and other private landowners in providing information and access to the sample locations.



JOE P. McCLURE
Project Leader

Contents

*Tables 1-12, 27, 29-33, 35-38, 41, 42, and 44 are common to all Forest Inventory and Analysis forest resource statistical reports of the Eastern United States.

Since 1980 in Central Florida--

• area of timberland declined by 158,000 acres, or more than 6 percent. Timberland now totals 2.3 million acres, or 23 percent of the land area in this 20-county area. Some 294,000 acres were diverted to other land uses, whereas another 135,000 acres were added to the timberland base from both nonforest sources and reclassification of former reserved timberland. About 80 percent of the diverted timberland went into urban and related land uses. Agricultural uses made up another 11 percent of the diverted timberland. Transfer to a reserved timberland status and diversion to new areas of water accounted for the remainder.

• area of nonindustrial private forest (NIPF) land declined by 13 percent to 1.8 million acres. The decline in NIPF ownership was mostly due to a 51 percent drop in farmer-owned lands to less than 200,000 acres. Other corporate timberland decreased 14 percent to 848,000 acres, and timberland owned by other individuals increased by 10 percent to 745,000 acres. Public timberlands increased by 32 percent to 464,000 acres, largely due to an increase in State-owned lands. Forest industry land increased by 4 percent to 59,000 acres.

• area classed as pine and oak-pine forest types decreased by 9 percent to 869,000 acres. Area classed as hardwood forest types fell by 5 percent to 1.4 million acres. The area in pine plantations increased nearly 16 percent to almost 147,000 acres, whereas the area in natural pine stands declined almost 5 percent to 554,000 acres. Oak-gum-cypress is the predominant forest type despite a 10 percent reduction to less than 1.0 million acres. Slash pine type is the next most abundant forest type with 408,000 acres. Longleaf pine type continues to decrease, dropping 16 percent to 147,000 acres. Oak-pine type underwent the largest percentage decrease, falling 32 percent to 168,000 acres.

• total area undergoing a final harvest and retained in timberland averaged 13,000 acres annually. Of the area harvested annually, more than 7,500 acres were from pine types; 2,200 acres from oak-pine; and about 3,400 acres from hardwood types. About 76 percent of the annual harvest occurred on NIPF land, almost 20 percent on public land, and less than 5 percent on forest industry land. In addition to final harvests, partial harvests and other intermediate cutting occurred on an average of 7,400 acres each year. Fire, insects, disease, weather, and other natural agents damaged nearly 21,000 acres annually.

• area of timberland regenerated both artificially and naturally averaged 11,000 acres annually. New pine stands were established on about 7,600 of these acres, about the same as the area of pine stands harvested. More than one-third of the total regeneration was through artificial methods. More than half the artificial regeneration occurred on nonforest land. Overall, two-thirds of the artificial regeneration took place on NIPF land, and the remainder on public land. Natural regeneration occurred on 7,200 acres annually, with more than 76 percent occurring on NIPF land.

• average basal area of live trees 5.0 inches d.b.h. and larger increased from 60 to 69 square feet per acre of timberland. Average net merchantable volume per acre of all trees is up 28 percent to 1,413 cubic feet. The average number of saplings per acre decreased from 367 to 325 trees. Numbers of both softwood and hardwood saplings declined. Numbers of softwood trees decreased 10 percent overall, but the declines were confined to diameter classes 10 inches and smaller. Numbers of hardwood trees decreased 14 percent overall, but only classes 8 inches and below actually declined. Despite improvements in stocking, areas poorly stocked or nonstocked still occupy more than one-half of Central Florida's timberland.

• volume of softwood growing stock increased 13 percent to 1.6 billion cubic feet. Pond cypress, the predominant species, increased almost 16 percent to 662 million cubic feet. Slash pine, second in abundance, increased 21 percent to 430 million cubic feet. Bald cypress is next with 266 million cubic feet, up 5 percent. All softwood species increased in volume except longleaf pine, which decreased by 19 percent to 130 million cubic feet. Volume of softwood growing stock increased in all diameter classes except the 6-inch class, which dropped by 4 percent. Volume of softwood sawtimber increased 24 percent to 5.3 billion board feet.

• volume of hardwood growing stock increased 23 percent to almost 1.2 billion cubic feet. Collectively, oaks accounted for 314 million cubic feet, up 21 percent. Tupelo and blackgum volume amounted to 179 million cubic feet, increasing 21 percent. Bay and magnolia volume increased 33 percent to 158 million cubic feet. Sweetgum increased by almost 14 percent to 94 million cubic feet. Hardwood volume increased in all diameter classes. Volume of hardwood sawtimber increased by 31 percent to almost 3.6 billion board feet.

• net annual growth of growing stock averaged less than 96 million cubic feet, nearly the same as last survey. Net growth per acre averaged 45.3 cubic feet, up from 44.9 cubic feet. Softwood growth was down 3 percent to less than 63 million cubic feet, whereas hardwood growth was up more than 4 percent to 33 million cubic feet. Softwood growth was up about 11 percent on public ownerships. However, on forest industry and NIPF ownerships, it was down 11 and 6 percent, respectively. Hardwood growth increased 89 percent on public land and 13 percent on forest industry land, but decreased 7 percent on NIPF land. Net annual growth for all species includes 399 million board feet of sawtimber, up more than 4 percent.

• annual removals of growing stock averaged more than 43 million cubic feet, down less than 5 percent from the previous level. Softwood removals accounted for 88 percent, or 38 million cubic feet, of the total and increased by almost 7 percent since the previous survey. Hardwood removals were down by 46 percent to only 5 million cubic feet. About 78 percent of softwood removals came from NIPF land, 13 percent from public land, and 9 percent from forest industry land. NIPF land accounted for 94 percent of the hardwood removals. Annual removals of growing stock included 153 million board feet of sawtimber, down 14 percent.

• annual mortality of growing stock averaged less than 23 million cubic feet, down almost 4 percent. Hardwoods accounted for 54 percent of the mortality. Hardwood mortality was up 11 percent, whereas softwood mortality decreased by 16 percent. The leading identifiable cause of death to softwoods was fire, which accounted for 22 percent of their mortality. Weather was next, causing about 17 percent of the softwood mortality, followed closely by insects with 15 percent. Hardwood mortality was more evenly distributed across all possible causes of death, with suppression being the main cause at 15 percent of their mortality. Altogether, annual mortality of growing stock included 63 million board feet of sawtimber, a decline of nearly 18 percent. Mortality reduced gross growth of softwoods by 14 percent and gross growth of hardwoods by 27 percent.

How the Inventory is Made

The method of the inventory is a sampling procedure designed to provide reliable statistics primarily at the State and Survey Unit levels. Individual county statistics are presented so that any combination of counties may be added together until a total is large enough to meet the desired degree of reliability. Procedures were as follows:

1. Initial estimates of forest and nonforest areas were based on the classification of 34,012 sample clusters systematically spaced on the latest aerial photographs available. A subsample of 4,233 of the 16-point clusters was ground checked, and a linear regression was fitted to the data to develop the relationship between the photo and ground classification of the subsample. This procedure provides a means for adjusting the initial estimates of area for change in land use since date of photography and for photo misclassifications.

2. Estimates of timber volume and forest classifications were based on measurements recorded at 855 ground sample locations systematically distributed on timberland. The plot design at each location was based on a cluster of 10 points. In most cases, variable plots, established by using a basal-area factor of 37.5 square feet per acre, were systematically spaced within a single forest condition at 5 of the 10 cluster points. Trees less than 5 inches d.b.h. were tallied on a fixed-radius plot around each point center.

3. Equations prepared from detailed measurements collected on standing trees in this Survey Unit, and similar measurements taken throughout the Southeast, were used to compute the volume of individual tally trees. A mirror caliper and sectional aluminum poles were used to obtain the additional measurements on these standing trees required to construct volume equations.

4. Felled trees were measured at 7 active cutting operations. These data will supplement the standing-tree volume data and be used to generate utilization factors for product and species groups. Forest biomass estimates were made from equations developed by the Utilization of Southern Timber Research Work Unit of the Southeastern Forest Experiment Station in Athens, GA.

5. Estimates of growth, removals, and mortality were determined from the remeasurement of 885 permanent sample plots established in the fourth survey.

6. Ownership information was collected from correspondence, public records, and local contacts. In those counties where the sample missed a particular ownership class, temporary sample plots were added.

7. All field data were sent to Asheville for editing and were entered into disk and magnetic-tape storage for processing. Final estimates were based on statistical summaries of the data.

Reliability of the Data

Statistical analysis of these data indicates the following sampling errors in terms of one standard error (two times out of three):

	Percent
Per million acres of timberland	1.80
Per billion cubic feet of growing stock	6.89
Per billion cubic feet of net annual growth	1.20
Per billion cubic feet of annual removals	2.49

Sampling errors for county and unit totals,[a] in terms of one standard error, Central Florida, 1988

County	Timberland area	Cubic-foot volume of growing stock		
		Inventory	Growth	Removals
	Sampling error[b]			
Brevard	6.32	18.59	21.88	37.94
Citrus	2.74	15.87	16.23	38.93
De Soto	7.62	27.93	24.84	100.29
Hardee	4.98	21.31	19.47	48.13
Hernando	3.56	14.59	13.11	48.95
Highlands	7.33	23.96	21.43	55.31
Hillsborough	5.51	18.51	16.53	52.75
Indian River	11.91	35.29	33.64	.00
Lake	2.92	11.33	10.94	39.02
Manatee	9.53	30.36	25.17	55.45
Okeechobee	10.34	22.77	20.25	.00
Orange	4.37	14.28	14.10	30.51
Osceola	4.16	11.85	11.76	71.56
Pasco	4.03	14.11	12.99	49.71
Pinellas	20.51	34.51	37.82	77.33
Polk	3.88	12.50	11.65	30.98
St. Lucie	14.24	25.75	36.53	56.39
Sarasota	9.01	21.89	28.28	61.93
Seminole	5.82	23.22	21.24	42.60
Sumter	2.99	14.52	12.13	43.14
Total	1.13	4.11	3.88	11.96

[a]Sampling error of breakdowns of county and unit totals may be computed with the following formula:

$$E = \frac{(SE)\ \sqrt{(\text{Specified volume or area})}}{\sqrt{(\text{Volume or area total in question})}}$$

Where: E = Sampling error of the volume or area total in question

SE = Specified sampling error in table.

[b]By random-sampling formula (in percent).

Definitions of Terms

Allowable cut. The volume of timber that could be cut on timberland during a given period under specified management plans aimed at sustained production of timber products.

Basal area. The area in square feet of the cross section at breast height of a single tree or of all the trees in a stand, usually expressed as square feet of basal area per acre.

Biomass. The aboveground green weight of solid wood and bark in live trees 1.0 inch d.b.h. and larger from the ground to the tip of the tree. All foliage is excluded. The weight of wood and bark in lateral limbs, secondary limbs, and twigs under 0.5 inch in diameter at the point of occurrence on sapling-size trees is included but is excluded on poletimber and sawtimber-size trees.

Bole. That portion of a tree between a 1-foot stump and a 4-inch top diameter outside bark (d.o.b.) in trees 5.0 inches d.b.h. and larger.

Broad management class. A classification of timberland based on forest type and stand origin.

Pine plantation. Stands that have been artificially regenerated by planting or direct seeding and with a southern yellow pine, white pine-hemlock, or other softwood forest type.

Natural pine. Stands that have not been artificially regenerated and with a southern yellow pine, white pine-hemlock, or other softwood forest type.

Oak-pine. Stands with a forest type of oak-pine.

Upland hardwood. Stands with a forest type of oak-hickory, chestnut oak, southern scrub oak, or maple-beech-birch.

Lowland hardwood. Stands with a forest type of oak-gum-cypress, elm-ash-cottonwood, palm, or other tropical.

Bureau of Land Management lands. Federal lands administered by the Bureau of Land Management.

Census water. Streams, sloughs, estuaries, canals, and other moving bodies of water one-eighth of a statute mile in width and greater, and lakes, reservoirs, ponds, and other permanent bodies of water 40 acres in area and greater.

Commercial forest land. (see: Timberland).

Commercial species. Tree species conventionally regarded as being able to develop into trees suitable for the manufacture of industrial timber products. Species that typically exhibit small size, poor form, or inferior quality are excluded.

Cropland. Land under cultivation within the past 24 months, including orchards and land in soil-improving crops but excluding land cultivated in developing improved pasture. Also includes idle farmland.

D.b.h. Tree diameter (outside bark) at breast height (4.5 feet above the ground).

Diameter class. A classification of trees based on tree d.b.h. Two-inch diameter classes are commonly used by Forest Inventory and Analysis, with the even inch as the approximate midpoint for a class. For example, the 6-inch class includes trees 5.0 through 6.9 inches d.b.h.

Farm. Land on which agricultural operations are being conducted and sale of agricultural products totaled $1,000 or more during the year.

Farm operator. A person who operates a farm, either doing the work or directly supervising the work.

Farmer-owned land (see: Other private land).

Forest industry land. Land owned by companies or individuals operating wood-using plants.

Forest industry-leased land. Land leased or under management contracts to forest industry from other owners for periods of one forest rotation or longer. Land under cutting contracts is not included.

Forest land. Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use.

Forest type. A classification of forest land based on the species forming a plurality of live-tree stocking.

White pine-hemlock. Forests in which eastern white pine, red pine, or jack pine, singly or in combination, constitute a plurality of the stocking. (Common associates include hemlock, birch, and maple.)

Spruce-fir. Forests in which spruce or true firs, singly or in combination, constitute a plurality of the stocking. (Common associates include maple, birch, and hemlock.)

Longleaf-slash pine. Forests in which longleaf or slash pine, singly or in combination, constitute a plurality of the stocking. (Common associates include oak, hickory, and gum.)

Loblolly-shortleaf pine. Forests in which loblolly pine, shortleaf pine, or other southern yellow pines, except longleaf or slash pine, singly or in combination, constitute a plurality of the stocking. (Common associates include oak, hickory, and gum.)

Oak-pine. Forests in which hardwoods (usually upland oaks) constitute a plurality of the stocking but in which pines account for 25 to 50 percent of the stocking. (Common associates include gum, hickory, and yellow-poplar.)

Oak-hickory. Forests in which upland oaks or hickory, singly or in combination, constitute a plurality of the stocking, except where pines account for 25 to 50 percent, in which case the stand would be classified oak-pine. (Common associates include yellow-poplar, elm, maple, and black walnut.)

Oak-gum-cypress. Bottom-land forests in which tupelo, blackgum, sweetgum, oaks, or southern cypress, singly or in combination, constitute a plurality of the stocking, except where pines account for 25 to 50 percent, in which case the stand would be classified oak-pine. (Common associates include cottonwood, willow, ash, elm, hackberry, and maple.)

Elm-ash-cottonwood. Forests in which elm, ash, or cottonwood, singly or in combination, constitute a plurality of the stocking. (Common associates include willow, sycamore, beech, and maple.)

Maple-beech-birch. Forests in which maple, beech, or yellow birch, singly or in combination, constitute a plurality of the stocking. (Common associates include hemlock, elm, basswood, and white pine.)

Palm, other tropical. Forests in which palms and other tropicals constitute a plurality of the stocking.

Gross growth. Annual increase in merchantable volume of trees in the absence of cutting and mortality. (Gross growth includes survivor growth, ingrowth, growth on ingrowth, growth on removals prior to removal, and growth on mortality prior to death.)

Growing-stock trees. Live sawtimber-size trees of commercial species containing at least a 12-foot log, or two noncontiguous saw logs each 8 feet or longer, meeting minimum grade requirements (hardwoods must qualify as a log grade of either 3 or 4; softwoods must qualify as a log grade 3) with at least one-third of the gross board-foot volume (International 1/4-inch rule) between a 1-foot stump and the minimum saw-log top being sound, or a live tree below sawtimber size that will prospectively qualify under the above standards.

Desirable tree. A tree that qualifies as growing stock and has no serious defects in quality limiting present or prospective use; is of relatively high vigor (30 percent or more live crown ratio); is compatible with the site and

physiographic class; has a total board-foot loss not to exceed 15 percent in softwoods or 25 percent in hardwoods as a result of severe sweep, crook, or lean; and has a relatively clear bole.

Acceptable tree. A tree that qualifies as growing stock but does not meet the minimum requirements to qualify as a desirable tree. Included are sawtimber-size trees that do not contain a 12-foot saw log because of excessive, natural taper in the butt log but have the potential to produce a 12-foot saw log as diameter increases.

Growing-stock volume. Volume (cubic feet) of solid wood in growing-stock trees 5.0 inches d.b.h. and larger, from a 1-foot stump to a minimum 4.0-inch top diameter, outside bark, on the central stem. Volume of solid wood in primary forks from the point of occurrence to a minimum 4.0-inch top diameter outside bark is included.

Hardwoods. Angiosperms; dicotyledonous trees (including all palm species which are monocotyledonous), usually broadleaf and deciduous.

Soft hardwoods. Soft-textured hardwoods such as boxelder; red and silver maples, hackberry, loblolly-bay, sweetgum, yellow-poplar, magnolia, sweetbay, water tupelo, blackgum, sycamore, cottonwood, black cherry, willow, basswood, and elm.

Hard hardwoods. Hard-textured hardwoods such as sugar maple, birch, hickory, dogwood, persimmon (forest grown), black locust, beech, ash, honeylocust, holly, black walnut, mulberry, and all commercial oaks.

Idle farmland. Land including former cropland, orchard, improved pasture, and farm sites not tended within the past 2 years, and currently less than 16.7 percent stocked with live trees.

Improved pasture. Land currently improved for grazing by cultivation, seeding, irrigation, or clearing of trees or brush.

Indian land. All lands held in trust by the United States for individual Indians or tribes, or all lands, titles to which are held by individual Indians or tribes, subject to Federal restrictions against alienation.

Industrial wood. All roundwood products except fuelwood.

Ingrowth. The number or net volume of trees that grow large enough during a specified year to qualify as saplings, poletimber, or sawtimber.

Inhibiting vegetation. Cover sufficiently dense to prevent the establishment of tree seedlings.

Land area. The area of dry land and land temporarily or partly covered by water such as marshes, swamps, and river floodplains (omitting tidal flats below mean high tide), streams, sloughs, estuaries, and canals less than one-eighth of a statute mile in width, and lakes, reservoirs, and ponds less than 40 acres in area.

Live trees. All trees 1.0 inch d.b.h. and larger which are not dead at the time of inventory.

Live-tree volume. Volume (cubic feet) of wood above the ground line in live trees 1.0 inch d.b.h. and larger. The volume in twigs and lateral limbs smaller than 0.5 inch in diameter at the point of occurrence on sapling-size trees is included but is excluded on poletimber and sawtimber-size trees.

Log grade. A classification of logs based on external characteristics as indicators of quality or value.

Logging residues. The unused merchantable portion of growing-stock trees cut or destroyed during logging operations.

Logging slash. The unmerchantable portion of growing-stock trees (including saplings) plus all cull trees 1.0 inch d.b.h. and larger cut or destroyed during logging operations and not used.

Manageable stand. Timberland at least 60 percent stocked with growing-stock trees that can be featured together under a management scheme.

Merchantable portion. That portion of live trees 5.0 inches d.b.h. and larger between a 1-foot stump and a minimum 4.0-inch top diameter outside bark on the central stem. That portion of primary forks from the point of occurrence to a minimum 4.0-inch top diameter outside bark is included.

Merchantable volume. Solid-wood volume in merchantable portion of live trees.

Miscellaneous Federal land. Federal land other than national forests, land administered by the Bureau of Land Management, and land administered by the Bureau of Indian Affairs.

Miscellaneous private land. (see: Other private land).

Mortality. The merchantable volume in trees that have died from natural causes during a specified period.

National forest land. Federal land that has been legally designated as national forests or purchase units, and other land under the administration of the Forest Service, including experimental areas and Bankhead-Jones Title III land.

Net annual growth. The net change in merchantable volume for a specific year in the absence of cutting (gross growth minus mortality for that specified year).

Net volume. Gross volume of wood less deductions for rot, sweep, or other defect affecting use for timber products.

Noncommercial species. Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Nonforest land. Land that has never supported forests and land formerly forested where timber production is precluded by development for other uses.

Nonindustrial private forest (NIPF) land. (see: Other private land).

Nonstocked forest land. Timberland less than 16.7 percent stocked with growing-stock trees.

Other private land. Privately owned land excluding forest industry land or forest industry-leased land. Also referred to as nonindustrial private forest (NIPF) land.

Farmer-owned land. Owned by farm operators, excluding incorporated farm ownerships.

Other individual land. Owned by individuals other than farm operators.

Other corporate land. Owned by corporations, including incorporated farm ownerships.

Other removals. The growing-stock volume of trees removed from the inventory by cultural operations such as timber stand improvement, land clearing, and other changes in land use that result in the removal of the trees from the timberland.

Plant residues. Wood material generated in the production of timber products at primary manufacturing plants.

Coarse residues. Material, such as slabs, edgings, trim, veneer cores and ends, which is suitable for chipping.

Fine residues. Material, such as sawdust, shavings, and veneer chippings, which is not suitable for chipping.

Plant byproducts. Residues (coarse or fine) utilized in the further manufacture of industrial products or for consumer use, or utilized as fuel.

Unused plant residues. Residues (coarse or fine) that are not used for any product, including fuel.

Poletimber-size trees. Live trees at least 5.0 inches d.b.h. but smaller than sawtimber size.

Productive-reserved forest land. (see: Reserved timberland).

Quality class. A classification of sawtimber volume by log or tree grades.

Rangeland. Land on which the natural vegetation is predominantly native grasses, grasslike plants, forbs, or shrubs valuable for forage, not qualifying as timberland and not developed for another land use. Rangeland includes natural grassland and savannah.

Reserved timberland. Forest land sufficiently productive to qualify as timberland, but withdrawn from timber utilization through statute or adminstrative designation.

Rotten trees. Live trees of commercial species that do not contain at least one 12-foot saw log, or two noncontiguous saw logs, each 8 feet or longer, now or prospectively, primarily because of rot or missing sections, and with less than one-third of the gross board-foot tree volume in sound material.

Rough trees. Live trees of commercial species that do not contain at least one 12-foot saw log, or two noncontiguous saw logs, each 8 feet or longer, now or prospectively, primarily because of roughness, poor form, splits, and cracks, and with less than one-third of the gross board-foot tree volume in sound material; and live trees of noncommercial species.

Roundwood (roundwood logs). Logs, bolts, or other round sections cut from trees for industrial or consumer uses.

Roundwood chipped. Any timber cut primarily for pulpwood, delivered to nonpulpmills, chipped, and then sold to pulpmills as residues, including chipped tops, jump sections, whole trees, and pulpwood sticks.

Roundwood products. Any primary product such as lumber, poles, pilings, pulp, or fuelwood which is produced from roundwood.

Salvable dead trees. Standing or down dead trees considered utilizable by Forest Inventory and Analysis standards.

Saplings. Live trees 1.0 to 5.0 inches d.b.h.

Saw log. A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight, and with a minimum diameter inside bark for softwoods of 6 inches (8 inches for hardwoods).

Saw-log portion. That part of the bole of sawtimber trees between a 1-foot stump and the saw-log top, including the portion of forks large enough to contain a saw log.

Saw-log top. The point on the bole of sawtimber trees above which a conventional saw log cannot be produced. The minimum saw-log top is 7.0 inches in diameter outside bark (d.o.b.) for softwoods and 9.0 inches (d.o.b.) for hardwoods.

Sawtimber-size trees. Softwoods 9.0 inches d.b.h. and larger and hardwoods 11.0 inches d.b.h. and larger.

Sawtimber volume. Growing-stock volume in the saw-log portion of sawtimber-size trees in board feet (International 1/4-inch rule).

Seedlings. Live trees of commercial species less than 1.0 inch d.b.h. that are expected to survive and develop.

Site class. A classification of forest land in terms of inherent capacity to grow crops of industrial wood based on fully stocked natural stands, by annual production capacity.

Class 1. 165 or more cubic feet per acre.

Class 2. 120 to 164 cubic feet per acre.

Class 3. 85 to 119 cubic feet per acre.

Class 4. 50 to 84 cubic feet per acre.

Class 5. 20 to 49 cubic feet per acre.

Softwoods. Gymnosperms; in the order Coniferales, usually evergreen (includes

the genus Taxodium which is deciduous), having needles or scalelike leaves.

Pines. Yellow pine species which include loblolly, longleaf, slash, pond, shortleaf, pitch, Virginia, sand, spruce, and Table Mountain pines.

Other softwoods. Cypress, eastern redcedar, white cedar, eastern white pine, eastern hemlock, spruce, and fir.

Stand-size class. A classification of forest land based on the diameter class distribution of growing-stock trees in the stand.

Sawtimber stands. Stands at least 16.7 percent stocked with growing-stock trees, with half or more of total stocking in sawtimber and poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

Poletimber stands. Stands at least 16.7 percent stocked with growing-stock trees of which half or more of total stocking is in poletimber and sawtimber trees, and with poletimber stocking exceeding that of sawtimber.

Sapling-seedling stands. Stands at least 16.7 percent stocked with growing-stock trees of which more than half of total stocking is saplings and seedlings.

State, county, and municipal land. Land owned by States, counties, and local public agencies or municipalities, or land leased to these governmental units for 50 years or more.

Stocking. The degree of occupancy of land by trees, measured by basal area or the number of trees in a stand and spacing in the stand, compared with a minimum standard, depending on tree size, required to fully utilize the growth potential of the land.

Fully stocked. 100 percent or more stocking.

Medium stocked. 60 to 99 percent stocking.

Poorly stocked. Less than 60 percent stocking.

Survivor growth. The merchantable volume increment on trees 5.0 inches d.b.h. and larger in the inventory at the beginning of the year and surviving to its end.

Timberland. Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, not currently developed for nonforest use, capable of producing 20 cubic feet of industrial wood per acre per year and not withdrawn from timber utilization by legislative action.

Timber products. Roundwood products and byproducts.

Timber removals. The merchantable volume of trees removed from the inventory by harvesting, cultural operations such as stand improvement, land clearing, or changes in land use.

Top. The portion of the main stem and forks from a 4.0-inch diameter outside bark to the tips of the main stem and forks, plus all other limbs above the 4.0-inch top at least 0.5 inch in diameter at their point of occurrence.

Treatment opportunity. A classification of the management or treatment that would most improve for timber production the existing condition of the stand being sampled.

Tree grade. A classification of sawtimber trees based on the log grade of the butt log in the tree.

Unproductive forest land. (see: Woodland).

Upper-stem portion. That part of the main stem or fork of sawtimber trees above the saw-log top to minimum top diameter 4.0 inches outside bark or to the point where the main stem or fork breaks into limbs.

Urban and other areas. Areas developed for residential, industrial, or recreational purposes, school yards, cemeteries, roads, railroads, airports, beaches, powerlines and other rights-of-way, or other nonforest land not included in any other specified land use class.

Woodland. Forest land incapable of producing 20 cubic feet per acre per year of industrial wood under natural conditions, because of adverse site conditions.

Stocking Standard

D.b.h. class	Minimum number of trees per acre for full stocking	Minimum basal area per acre for full stocking
Seedlings	600	--
2	560	--
4	460	--
6	340	67
8	240	84
10	155	85
12	115	90
14	90	96
16	72	101
18	60	106
20	51	111

Conversion factors

Cubic feet of wood per average cord (excluding bark)

D.b.h. class	All species	Pine	Other softwood	Hardwood
6	62.8	61.0	68.2	60.0
8	70.9	68.1	76.0	68.4
10	76.1	73.1	81.4	73.4
12	79.0	76.7	85.2	76.4
14	81.1	79.4	88.2	78.4
16	82.4	81.6	90.4	79.8
18	83.4	83.3	92.3	80.8
20	84.2	84.8	93.8	81.5
22	84.4	86.0	95.1	82.1
24+	85.5	87.8	97.9	83.2
Average	76.9	74.2	82.0	75.3

Metric equivalents of units used in this report

1 acre = 4,046.86 square meters or 0.404686 hectare
1 cubic foot = 0.028317 cubic meter
1 inch = 2.54 centimeters or 0.0254 meter
Breast height (4.5 feet) = 1.4 meters above ground level
1 square foot = 929.03 square centimeters or 0.0929 square meter
1 square foot per acre basal area = 0.229568 square meter per hectare
1 pound = 0.454 kilogram
1 ton = 0.907 metric ton

County Tables

The county tables are intended for use in compiling forest resource estimates for groups of counties. Because the sampling procedure used by the Forest Survey was intended primarily to furnish inventory data for the survey unit as a whole, individual county estimates have limited and variable accuracy. As county totals are broken down by various subdivisions, the possibility of error increases and is greatest for the smallest items. The order of this increase can be computed with the formula on page 4.

Table 1.--Area, by county and land class, Central Florida, 1988

County	All land[a]	Forest land				Nonforest land[b]
		Total	Timberland	Woodland	Reserved timberland	
	Acres					
Brevard	637,062	118,545	109,806	8,739	--	518,517
Citrus	402,330	232,125	226,973	5,146	6	170,205
De Soto	406,867	48,176	48,176	--	--	358,691
Hardee	407,968	90,844	90,844	--	--	317,124
Hernando	305,421	170,299	170,299	--	--	135,122
Highlands	658,310	84,688	84,202	486	--	573,622
Hillsborough	673,830	131,354	121,406	9,948	--	542,476
Indian River	318,118	36,513	29,367	7,146	--	281,605
Lake	610,790	258,234	239,716	5,698	12,820	352,556
Manatee	478,163	49,249	43,563	5,666	20	428,914
Okeechobee	493,114	33,366	31,780	1,586	--	459,748
Orange	582,714	175,071	172,515	2,556	--	407,643
Osceola	863,795	186,501	183,545	2,556	400	677,294
Pasco	472,224	150,790	150,455	157	178	321,434
Pinellas	179,315	19,594	11,541	7,677	376	159,721
Polk	1,166,803	288,235	263,571	24,664	--	878,568
St. Lucie	371,840	34,853	33,267	1,586	--	336,987
Sarasota	366,810	57,182	56,050	1,132	--	309,628
Seminole	190,739	76,704	74,953	--	1,751	114,035
Sumter	359,174	178,938	173,311	5,567	60	180,236
Total	9,945,387	2,421,261	~~2,351,340~~ 2315340	90,310	15,611	7,524,126

[a]From U.S. Bureau of the Census, 1980.

[b]Includes 60,102 acres of water according to Forest Survey standards of area classification, but defined by the Bureau of Census as land.

Table 2.--Area of timberland, by county and ownership class, Central FLorida, 1988

County	All ownerships	Ownership class							
		National forest	Miscellaneous Federal	State	County and municipal	Forest industry[a]	Other private		
							Farmer	Corporate	Individual
	Acres								
Brevard	109,806	--	10,758	205	2,664	1,920	19,406	44,357	30,496
Citrus	226,973	--	2,704	46,597	678	8,763	--	64,234	103,997
De Soto	48,176	--	36	1,040	198	--	9,380	18,761	18,761
Hardee	90,844	--	--	1,018	80	--	8,158	40,794	40,794
Hernando	170,299	--	3,806	45,978	1,715	410	2,631	42,094	73,665
Highlands	84,202	--	22,500	4,213	140	--	13,034	26,068	18,247
Hillsborough	121,406	--	135	19,125	2,917	--	10,177	58,520	30,532
Indian River	29,367	--	--	583	766	--	7,642	12,735	7,641
Lake	239,716	69,712	280	15,684	454	305	11,270	60,862	81,149
Manatee	43,563	--	--	5,278	2,086	--	2,262	20,362	13,575
Okeechobee	31,780	--	--	192	100	--	10,496	10,496	10,496
Orange	172,515	--	278	34,309	11,238	--	5,067	81,082	40,541
Osceola	183,545	--	850	12,412	350	215	21,513	112,349	35,856
Pasco	150,455	--	20	30,109	4,096	28,757	6,906	34,529	46,038
Pinellas	11,541	--	--	600	1,026	--	--	5,949	3,966
Polk	263,571	--	15,000	20,793	1,881	--	35,296	98,830	91,771
St. Lucie	33,267	--	--	535	358	--	2,490	17,432	12,452
Sarasota	56,050	--	--	8,749	3,492	--	2,434	26,772	14,603
Seminole	74,953	--	160	180	1,269	--	15,944	25,511	31,889
Sumter	173,311	--	--	54,545	5	18,990	15,350	46,048	38,373
Total	2,315,340	69,712	56,527	302,145	35,513	59,360	199,456	847,785	744,842

[a]Includes 16,861 acres of other private land under long-term lease.

Table 3.--Area of timberland, by county and forest-type group, Central Florida, 1988

County	All type groups	Forest-type group								
		White pine-hemlock	Spruce-fir	Longleaf-slash	Loblolly-shortleaf	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
	Acres									
Brevard	109,806	--	--	40,237	11,091	--	4,923	53,555	--	--
Citrus	226,973	--	--	50,992	9,175	44,238	66,324	53,185	3,059	--
De Soto	48,176	--	--	11,725	198	2,345	9,381	24,527	--	--
Hardee	90,844	--	--	21,415	80	4,079	12,237	44,873	8,160	--
Hernando	170,299	--	--	34,002	21,048	15,122	74,639	25,488	--	--
Highlands	84,202	--	--	25,534	--	5,214	15,674	37,780	--	--
Hillsborough	121,406	--	--	12,721	2,544	12,720	21,001	72,420	--	--
Indian River	29,367	--	--	16,048	--	5,095	2,547	5,677	--	--
Lake	239,716	--	--	57,893	42,060	19,102	28,360	87,793	4,508	--
Manatee	43,563	--	--	9,804	4,349	--	9,049	20,361	--	--
Okeechobee	31,780	--	--	10,595	--	--	--	19,086	2,099	--
Orange	172,515	--	--	27,873	34,042	3,119	18,014	89,467	--	--
Osceola	183,545	--	--	40,023	2,390	11,951	17,582	111,599	--	--
Pasco	150,455	--	--	39,387	--	6,906	41,809	62,353	--	--
Pinellas	11,541	--	--	4,992	1,983	1,983	--	2,583	--	--
Polk	263,571	--	--	50,395	2,599	14,119	59,095	126,773	10,590	--
St. Lucie	33,267	--	--	22,771	2,491	2,490	--	5,515	--	--
Sarasota	56,050	--	--	20,636	--	8,749	7,301	19,364	--	--
Seminole	74,953	--	--	14,025	--	3,189	25,511	32,228	--	--
Sumter	173,311	--	--	43,503	11,511	8,032	44,668	59,661	5,936	--
Total	2,315,340	--	--	554,571	145,561	168,453	458,115	954,288	34,352	--

Table 4.--Area of timberland, by county and stand-size class, Central Florida, 1988

County	All stands	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
	Acres				
Brevard	109,806	45,241	24,951	10,980	28,634
Citrus	226,973	79,645	47,053	61,713	38,562
De Soto	48,176	15,147	11,923	--	21,106
Hardee	90,844	44,874	24,556	4,080	17,334
Hernando	170,299	76,529	35,581	35,174	23,015
Highlands	84,202	37,779	10,214	10,354	25,855
Hillsborough	121,406	68,216	29,648	13,364	10,178
Indian River	29,367	19,179	2,547	--	7,641
Lake	239,716	94,320	70,467	35,298	39,631
Manatee	43,563	18,100	8,873	--	16,590
Okeechobee	31,780	21,284	6,298	--	4,198
Orange	172,515	76,732	51,261	20,272	24,250
Osceola	183,545	99,996	34,176	22,227	27,146
Pasco	150,455	73,363	26,136	27,502	23,454
Pinellas	11,541	7,575	1,983	1,983	--
Polk	263,571	118,685	64,610	29,179	51,097
St. Lucie	33,267	18,326	7,471	4,980	2,490
Sarasota	56,050	26,368	10,317	3,598	15,767
Seminole	74,953	52,472	3,349	3,188	15,944
Sumter	173,311	81,000	43,953	22,312	26,046
Total	2,315,340	1,074,831	515,367	306,204	418,938

Table 5.--Area of timberland, by county and site class, Central Florida, 1988

County	All classes	Site class (cubic feet per acre per year)				
		>164	120-164	85-119	50-84	20-49
	Acres					
Brevard	109,806	--	--	8,317	56,330	45,159
Citrus	226,973	--	--	4,395	89,429	133,149
De Soto	48,176	--	--	198	22,183	25,795
Hardee	90,844	--	--	12,317	36,715	41,812
Hernando	170,299	2,631	2,631	16,961	101,715	46,361
Highlands	84,202	--	--	140	47,888	36,174
Hillsborough	121,406	--	--	7,633	72,048	41,725
Indian River	29,367	--	--	766	8,225	20,376
Lake	239,716	2,255	11,806	33,854	128,500	63,301
Manatee	43,563	--	--	4,349	13,574	25,640
Okeechobee	31,780	--	--	100	19,084	12,596
Orange	172,515	--	--	10,135	108,891	53,489
Osceola	183,545	--	--	12,300	99,649	71,596
Pasco	150,455	--	--	9,583	90,786	50,086
Pinellas	11,541	--	--	1,026	6,549	3,966
Polk	263,571	--	--	940	171,777	90,854
St. Lucie	33,267	--	--	358	12,986	19,923
Sarasota	56,050	--	--	--	27,248	28,802
Seminole	74,953	--	--	14,025	51,361	9,567
Sumter	173,311	3,837	2,098	5,935	134,221	27,220
Total	2,315,340	8,723	16,535	143,332	1,299,159	847,591

Table 6.--Area of timberland, by county and stocking class of growing-stock trees, Central Florida, 1988

County	All classes	Stocking class (percent)[a]				
		>130	100-130	60-99	16.7-59	<16.7
	Acres					
Brevard	109,806	11,294	13,009	24,844	32,025	28,634
Citrus	226,973	9,573	14,553	35,454	128,831	38,562
De Soto	48,176	36	3,386	9,578	14,070	21,106
Hardee	90,844	--	16,319	24,556	32,635	17,334
Hernando	170,299	2,298	17,828	70,679	56,479	23,015
Highlands	84,202	7,713	10,321	17,032	23,281	25,855
Hillsborough	121,406	20,995	5,224	44,914	40,095	10,178
Indian River	29,367	583	3,313	2,547	15,283	7,641
Lake	239,716	10,683	42,870	61,760	84,772	39,631
Manatee	43,563	--	--	11,138	15,835	16,590
Okeechobee	31,780	2,292	12,695	6,298	6,297	4,198
Orange	172,515	18,322	26,508	42,883	60,552	24,250
Osceola	183,545	28,683	49,086	42,061	36,569	27,146
Pasco	150,455	22,524	33,858	27,064	43,555	23,454
Pinellas	11,541	600	6,975	--	3,966	--
Polk	263,571	30,838	53,484	66,571	61,581	51,097
St. Lucie	33,267	535	2,848	4,981	22,413	2,490
Sarasota	56,050	--	--	17,037	23,246	15,767
Seminole	74,953	180	4,457	19,133	35,239	15,944
Sumter	173,311	21,900	26,045	42,313	57,007	26,046
Total	2,315,340	189,049	342,779	570,843	793,731	418,938

[a]See stocking standards on page 11.

Table 7.--Volume of growing stock and sawtimber on timberland, by county and species group, Central Florida, 1988

County	Growing stock					Sawtimber				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet[a]					Thousand board feet				
Brevard	102,020	52,946	14,313	15,937	18,824	276,963	93,162	40,887	59,204	83,710
Citrus	154,888	62,509	39,615	23,979	28,785	509,420	193,390	173,024	67,269	75,737
De Soto	35,809	6,092	5,776	15,877	8,064	126,212	29,158	23,663	43,323	30,068
Hardee	97,301	27,496	28,117	13,897	27,791	375,538	137,141	105,517	29,542	103,338
Hernando	176,404	50,057	5,448	58,974	61,925	571,602	180,736	24,287	166,150	200,429
Highlands	89,409	16,153	34,507	28,983	9,766	321,114	58,584	146,011	75,901	40,618
Hillsborough	204,390	24,585	102,628	31,591	45,586	641,067	116,102	278,864	80,314	165,787
Indian River	27,548	16,490	8,470	267	2,321	110,307	76,008	24,232	--	10,067
Lake	277,521	97,532	74,279	72,500	33,210	871,810	373,741	199,179	178,974	119,916
Manatee	27,861	7,299	--	13,404	7,158	106,374	32,403	--	49,901	24,070
Okeechobee	58,351	12,921	16,423	24,352	4,655	203,725	45,467	66,346	77,282	14,630
Orange	232,202	51,547	92,295	65,841	22,519	700,659	149,603	281,753	185,388	83,915
Osceola	316,504	60,584	168,126	60,832	26,962	970,242	287,965	459,028	160,957	62,292
Pasco	215,159	31,327	88,848	43,456	51,528	661,477	115,272	236,141	122,562	187,502
Pinellas	15,000	8,889	3,329	2,266	516	53,222	37,553	7,467	6,729	1,473
Polk	387,694	70,170	167,830	104,271	45,423	1,147,375	278,496	430,017	272,713	166,149
St. Lucie	20,785	18,291	2,494	--	--	79,465	69,589	9,876	--	--
Sarasota	24,532	16,612	--	3,404	4,516	73,329	48,126	--	8,345	16,858
Seminole	65,279	19,666	477	15,163	29,973	266,765	84,865	2,117	57,619	122,164
Sumter	257,161	38,857	87,007	57,984	73,313	831,490	121,583	284,775	167,295	257,837
Total	2,785,818	690,023	939,982	652,978	502,835	8,898,156	2,528,944	2,793,184	1,809,468	1,766,560

[a]Factors for converting to cords are shown on page 11.

Table 8.--Average net annual growth of growing stock and sawtimber on timberland, by county and species group, Central Florida, 1980-1987

County	Growing stock					Sawtimber				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet					Thousand board feet				
Brevard	4,179	3,165	272	383	359	16,955	12,748	1,248	1,661	1,298
Citrus	6,954	3,979	1,020	877	1,078	25,790	12,724	5,563	2,365	5,138
De Soto	1,093	204	122	496	271	5,087	1,918	689	1,766	714
Hardee	2,743	784	843	373	743	10,610	4,994	3,061	628	1,927
Hernando	6,837	3,559	144	1,479	1,655	24,796	12,598	771	6,364	5,063
Highlands	2,477	778	686	741	272	10,317	1,926	3,804	3,216	1,371
Hillsborough	6,125	916	2,898	793	1,518	26,217	4,297	14,088	3,660	4,172
Indian River	883	539	279	15	50	4,632	3,221	1,261	--	150
Lake	11,023	5,466	2,092	2,499	966	45,144	22,392	7,319	10,343	5,090
Manatee	835	263	--	265	307	3,553	1,465	--	1,178	910
Okeechobee	1,803	631	370	637	165	7,612	2,091	1,975	2,791	755
Orange	8,180	3,339	2,379	1,915	547	40,812	19,765	11,551	6,268	3,228
Osceola	9,387	2,040	4,720	1,867	760	39,931	11,623	20,486	6,201	1,621
Pasco	6,219	1,251	2,238	1,223	1,507	29,551	6,598	10,539	4,118	8,296
Pinellas	592	351	128	94	19	3,309	2,315	671	276	47
Polk	13,636	3,667	5,479	3,585	905	54,459	13,599	23,784	11,978	5,098
St. Lucie	1,098	1,037	61	--	--	3,990	3,650	340	--	--
Sarasota	1,655	1,201	--	107	347	6,112	5,179	--	560	373
Seminole	1,661	658	33	345	625	10,481	3,682	192	3,389	3,218
Sumter	8,356	2,813	2,229	1,461	1,853	29,494	7,103	11,070	4,690	6,631
Total	95,736	36,641	25,993	19,155	13,947	398,852	153,888	118,412	71,452	55,100

Table 9.--Average annual removals of growing stock and sawtimber on timberland, by county and species group, Central Florida, 1980-1987

County	Growing stock					Sawtimber				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet					Thousand board feet				
Brevard	2,937	2,937	--	--	--	11,922	11,922	--	--	--
Citrus	1,984	1,034	605	293	52	5,674	2,089	2,376	953	256
De Soto	33	--	--	--	33	--	--	--	--	--
Hardee	3,467	2,552	850	65	--	13,635	11,052	2,583	--	--
Hernando	1,470	986	--	59	425	5,838	4,292	--	222	1,324
Highlands	1,399	1,399	--	--	--	4,806	4,806	--	--	--
Hillsborough	2,386	699	1,028	301	358	8,203	1,294	4,906	821	1,182
Indian River	--	--	--	--	--	--	--	--	--	--
Lake	4,006	1,345	1,366	1,069	226	13,372	5,821	3,682	3,133	736
Manatee	173	173	--	--	--	874	874	--	--	--
Okeechobee	--	--	--	--	--	--	--	--	--	--
Orange	5,064	2,497	2,226	237	104	19,106	10,346	7,234	1,115	411
Osceola	2,814	284	2,487	43	--	10,446	618	9,828	--	--
Pasco	3,200	2,427	773	--	--	15,270	12,551	2,719	--	--
Pinellas	775	190	585	--	--	3,090	919	2,171	--	--
Polk	6,227	1,503	3,917	807	--	15,264	5,913	8,854	497	--
St. Lucie	319	157	--	--	162	1,003	800	--	--	203
Sarasota	771	771	--	--	--	2,573	2,573	--	--	--
Seminole	2,467	1,960	--	396	111	10,128	8,698	--	1,430	--
Sumter	4,012	1,340	2,161	316	195	11,307	2,015	6,807	1,477	1,008
Total	43,504	22,254	15,998	3,586	1,666	152,511	86,583	51,160	9,648	5,120

Unit Tables

Table 10.--Area of timberland, by forest type and ownership class, Central Florida, 1988

Forest type	All ownerships	Ownership class				
		National forest	Other public	Forest industry	Forest industry-leased	Other private
			Acres			
Softwood types						
White pine-hemlock	--	--	--	--	--	--
Spruce-fir	--	--	--	--	--	--
Longleaf pine	146,567	13,942	38,695	305	--	93,625
Slash pine	408,004	16,731	92,897	16,470	12,255	269,651
Loblolly pine	3,059	--	--	--	--	3,059
Shortleaf pine	--	--	--	--	--	--
Virginia pine	--	--	--	--	--	--
Sand pine	92,596	19,517	4,963	--	--	68,116
Eastern redcedar	--	--	--	--	--	--
Pond pine	49,906	--	11,238	--	--	38,668
Spruce pine	--	--	--	--	--	--
Pitch pine	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--
Total	700,132	50,190	147,793	16,775	12,255	473,119
Hardwood types						
Oak-pine	168,453	5,578	31,251	--	--	131,624
Oak-hickory	216,953	--	30,150	--	--	186,803
Chestnut oak	--	--	--	--	--	--
Southern scrub oak	241,162	8,367	25,128	4,108	--	203,559
Oak-gum-cypress	954,288	5,577	157,765	21,616	4,606	764,724
Elm-ash-cottonwood	34,352	--	2,098	--	--	32,254
Maple-beech-birch	--	--	--	--	--	--
Total	1,615,208	19,522	246,392	25,724	4,606	1,318,964
All types	2,315,340	69,712	394,185	42,499	16,861	1,792,083

Table 11.--Area of timberland, by ownership and stocking classes of growing-stock trees, Central Florida, 1988

Ownership class	All classes	Stocking class (percent)[a]				
		>130	100-130	60-99	16.7-59	<16.7
	Acres					
National forest	69,712	--	11,154	19,517	30,674	8,367
Other public	394,185	32,564	57,216	115,269	131,515	57,621
Forest industry	42,499	7,845	14,869	--	19,785	--
Forest industry-leased	16,861	1,336	4,976	5,941	2,304	2,304
Other private	1,792,083	147,304	254,564	430,116	609,453	350,646
All ownerships	2,315,340	189,049	342,779	570,843	793,731	418,938

[a]See stocking standards on page 11.

Table 12.--Area of timberland, by forest type and stand-size class, Central Florida, 1988

Forest type	All stands	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
	Acres				
Softwood types					
White pine-hemlock	--	--	--	--	--
Spruce-fir	--	--	--	--	--
Longleaf pine	146,567	77,455	19,753	25,320	24,039
Slash pine	408,004	176,015	103,601	83,747	44,641
Loblolly pine	3,059	--	3,059	--	--
Shortleaf pine	--	--	--	--	--
Virginia pine	--	--	--	--	--
Sand pine	92,596	32,926	33,108	21,677	4,885
Eastern redcedar	--	--	--	--	--
Pond pine	49,906	18,280	26,558	2,534	2,534
Spruce pine	--	--	--	--	--
Pitch pine	--	--	--	--	--
Table Mountain pine	--	--	--	--	--
Total	700,132	304,676	186,079	133,278	76,099
Hardwood types					
Oak-pine	168,453	100,209	23,945	36,759	7,540
Oak-hickory	216,953	99,098	35,915	37,249	44,691
Chestnut oak	--	--	--	--	--
Southern scrub oak	241,162	22,564	14,372	34,492	169,734
Oak-gum-cypress	954,288	526,202	242,786	64,426	120,874
Elm-ash-cottonwood	34,352	22,082	12,270	--	--
Maple-beech-birch	--	--	--	--	--
Total	1,615,208	770,155	329,288	172,926	342,839
All types	2,315,340	1,074,831	515,367	306,204	418,938

Table 13.--Area of timberland, by stand-age and broad management classes, all ownerships, Central Florida, 1988

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
			Acres			
0-10	87,173	31,793	22,914	8,235	8,898	15,333
11-20	102,764	46,956	33,667	3,530	2,434	16,177
21-30	145,067	47,838	67,884	4,080	4,933	20,332
31-40	150,106	9,361	65,825	16,092	5,488	53,340
41-50	153,884	--	30,592	13,390	18,889	91,013
51-60	190,472	--	29,447	15,305	2,631	143,089
61-70	135,192	--	9,687	2,390	5,490	117,625
71-80	113,401	--	5,288	6,469	12,095	89,549
81+	98,358	--	2,544	2,789	16,050	76,975
No manageable stand	1,138,923	10,601	285,735	96,173	381,207	365,207
All classes	2,315,340	146,549	553,583	168,453	458,115	988,640

Table 14.--Area of timberland, by stand-age and broad management classes, public ownerships, Central Florida, 1988

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
			Acres			
0-10	20,085	10,612	4,618	2,118	2,737	--
11-20	40,036	22,963	10,766	--	--	6,307
21-30	35,236	14,232	15,990	2,097	--	2,917
31-40	30,111	7,107	12,385	2,098	2,299	6,222
41-50	26,023	--	7,133	--	2,118	16,772
51-60	45,057	--	7,025	3,119	--	34,913
61-70	33,577	--	4,886	--	3,188	25,503
71-80	27,956	--	5,288	--	2,098	20,570
81+	10,326	--	--	2,789	--	7,537
No manageable stand	195,490	5,871	69,107	24,608	51,205	44,699
All classes	463,897	60,785	137,198	36,829	63,645	165,440

Table 15.--Area of timberland, by stand-age and broad management classes, forest industry,[a] Central Florida, 1988

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
			Acres			
0-10	--	--	--	--	--	--
11-20	14,469	10,361	4,108	--	--	--
21-30	4,108	4,108	--	--	--	--
31-40	6,716	--	4,413	--	--	2,303
41-50	7,844	--	--	--	--	7,844
51-60	4,108	--	--	--	--	4,108
61-70	--	--	--	--	--	--
71-80	6,244	--	--	--	--	6,244
81+	--	--	--	--	--	--
No manageable stand	15,871	--	6,040	--	4,108	5,723
All classes	59,360	14,469	14,561	--	4,108	26,222

[a]Includes 16,861 acres of other private land under long-term lease.

Table 16.--Area of timberland, by stand-age and broad management classes, other private ownerships,[a] Central Florida, 1988

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
			Acres			
0-10	67,088	21,181	18,296	6,117	6,161	15,333
11-20	48,259	13,632	18,793	3,530	2,434	9,870
21-30	105,723	29,498	51,894	1,983	4,933	17,415
31-40	113,279	2,254	49,027	13,994	3,189	44,815
41-50	120,017	--	23,459	13,390	16,771	66,397
51-60	141,307	--	22,422	12,186	2,631	104,068
61-70	101,615	--	4,801	2,390	2,302	92,122
71-80	79,201	--	--	6,469	9,997	62,735
81+	88,032	--	2,544	--	16,050	69,438
No manageable stand	927,562	4,730	210,588	71,565	325,894	314,785
All classes	1,792,083	71,295	401,824	131,624	390,362	796,978

[a]Excludes 16,861 acres of other private land under long-term lease to forest industry.

Table 17.--Area of timberland, by broad management and stand-volume classes, Central Florida, 1988

Broad management class	All classes	Stand-volume class (cubic feet of growing stock per acre)				
		0-499	500-999	1000-1499	1500-1999	2000+
	Acres					
Pine plantation	146,549	80,716	26,161	11,566	9,040	19,066
Natural pine	553,583	234,206	144,506	83,272	48,517	43,082
Oak-pine	168,453	64,415	37,178	27,723	15,390	23,747
Upland hardwood	458,115	350,494	42,065	15,379	30,859	19,318
Lowland hardwood	988,640	235,681	132,154	124,602	91,317	404,886
All classes	2,315,340	965,512	382,064	262,542	195,123	510,099

Table 18.--Volume of growing stock on timberland, by broad management class, species group, and stand-age class, Central Florida, 1988

Broad management class and species group	All classes	No manageable stand	Stand-age class (years)								
			0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81+
	Thousand cubic feet										
Pine plantation											
Softwood	106,094	1,356	1,278	32,865	62,831	7,764	--	--	--	--	--
Hardwood	1,536	--	--	1,285	--	251	--	--	--	--	--
Total	107,630	1,356	1,278	34,150	62,831	8,015	--	--	--	--	--
Natural pine											
Softwood	426,706	114,392	3,163	13,734	68,563	89,054	58,085	43,830	17,422	14,628	3,835
Hardwood	11,989	1,647	491	--	2,743	1,010	1,938	339	1,269	2,552	--
Total	438,695	116,039	3,654	13,734	71,306	90,064	60,023	44,169	18,691	17,180	3,835
Oak-pine											
Softwood	114,275	33,346	2,245	--	4,334	23,446	12,840	19,641	5,501	9,260	3,662
Hardwood	47,459	3,334	--	--	1,039	11,978	12,553	8,516	2,478	3,881	3,680
Total	161,734	36,680	2,245	--	5,373	35,424	25,393	28,157	7,979	13,141	7,342
Upland hardwood											
Softwood	25,743	18,956	1,234	--	570	1,030	3,143	--	--	810	--
Hardwood	159,980	48,488	1,168	590	7,055	5,899	29,004	8,338	12,652	20,995	25,791
Total	185,723	67,444	2,402	590	7,625	6,929	32,147	8,338	12,652	21,805	25,791
Lowland hardwood											
Softwood	957,187	30,816	202	2,081	12,493	61,250	82,496	210,910	222,635	163,589	170,715
Hardwood	934,849	140,041	6,225	4,326	10,891	43,357	112,965	213,344	163,760	134,993	104,947
Total	1,892,036	170,857	6,427	6,407	23,384	104,607	195,461	424,254	386,395	298,582	275,662
All types											
Softwood	1,630,005	198,866	8,122	48,680	148,791	182,544	156,564	274,381	245,558	188,287	178,212
Hardwood	1,155,813	193,510	7,884	6,201	21,728	62,495	156,460	230,537	180,159	162,421	134,418
Total	2,785,818	392,376	16,006	54,881	170,519	245,039	313,024	504,918	425,717	350,708	312,630

Table 19.--Average net annual growth of growing stock on timberland, by broad management class, species group, and stand-age class, Central Florida, 1980-1987

Broad management class[a] and species group	All classes	No manageable stand	Stand-age class[a] (years)								
			0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81+
	Thousand cubic feet										
Pine plantation											
Softwood	11,290	270	289	5,168	5,218	345	--	--	--	--	--
Hardwood	297	--	--	122	165	10	--	--	--	--	--
Total	11,587	270	289	5,290	5,383	355	--	--	--	--	--
Natural pine											
Softwood	18,970	4,965	179	1,599	4,730	3,726	1,906	1,027	353	385	100
Hardwood	760	194	22	--	111	57	203	15	61	97	--
Total	19,730	5,159	201	1,599	4,841	3,783	2,109	1,042	414	482	100
Oak-pine											
Softwood	4,505	1,507	58	--	199	1,062	726	577	97	210	69
Hardwood	2,068	303	--	--	127	564	543	250	49	107	125
Total	6,573	1,810	58	--	326	1,626	1,269	827	146	317	194
Upland hardwood											
Softwood	1,125	889	54	--	21	14	113	--	--	34	--
Hardwood	4,432	1,655	107	218	221	218	909	174	246	325	359
Total	5,557	2,544	161	218	242	232	1,022	174	246	359	359
Lowland hardwood											
Softwood	26,744	856	56	73	512	1,960	2,551	6,094	6,229	4,174	4,239
Hardwood	25,545	4,323	179	271	525	1,428	3,638	5,317	4,334	3,362	2,168
Total	52,289	5,179	235	344	1,037	3,388	6,189	11,411	10,563	7,536	6,407
All types											
Softwood	62,634	8,487	636	6,840	10,680	7,107	5,296	7,698	6,679	4,803	4,408
Hardwood	33,102	6,475	308	611	1,149	2,277	5,293	5,756	4,690	3,891	2,652
Total	95,736	14,962	944	7,451	11,829	9,384	10,589	13,454	11,369	8,694	7,060

[a]Classifications at the end of the remeasurement period.

Table 20.--Average annual removals of growing stock on timberland, by broad management class, species group, and stand-age class, Central Florida, 1980-1987

Broad management class[a] and species group	All classes	No manageable stand	Stand-age class[a] (years)								
			0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81+
	Thousand cubic feet										
Pine plantation											
Softwood	2,245	277	--	1,342	626	--	--	--	--	--	--
Hardwood	--	--	--	--	--	--	--	--	--	--	--
Total	2,245	277	--	1,342	626	--	--	--	--	--	--
Natural pine											
Softwood	15,742	4,013	209	340	4,674	4,145	95	843	279	1,144	--
Hardwood	--	--	--	--	--	--	--	--	--	--	--
Total	15,742	4,013	209	340	4,674	4,145	95	843	279	1,144	--
Oak-pine											
Softwood	2,669	1,535	41	--	369	--	135	589	--	--	--
Hardwood	1,028	65	191	--	188	310	--	274	--	--	--
Total	3,697	1,600	232	--	557	310	135	863	--	--	--
Upland hardwood											
Softwood	650	650	--	--	--	--	--	--	--	--	--
Hardwood	417	318	--	50	--	49	--	--	--	--	--
Total	1,067	968	--	50	--	49	--	--	--	--	--
Lowland hardwood											
Softwood	16,946	481	--	42	1,460	810	1,564	2,100	4,047	3,440	3,002
Hardwood	3,807	318	--	228	165	270	451	471	979	856	69
Total	20,753	799	--	270	1,625	1,080	2,015	2,571	5,026	4,296	3,071
All types											
Softwood	38,252	6,956	250	1,724	7,129	4,955	1,794	3,532	4,326	4,584	3,002
Hardwood	5,252	701	191	278	353	629	451	745	979	856	69
Total	43,504	7,657	441	2,002	7,482	5,584	2,245	4,277	5,305	5,440	3,071

[a]Classifications before timber removals.

Table 21.--Merchantable volume of live trees and growing stock on timberland, by forest-type and species groups, Central Florida, 1988

Forest-type group	Live trees					Growing stock				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet									
White pine-hemlock	--	--	--	--	--	--	--	--	--	--
Spruce-fir	--	--	--	--	--	--	--	--	--	--
Longleaf-slash pine	471,063	438,233	905	7,542	24,383	448,751	435,538	905	6,793	5,515
Loblolly-shortleaf pine	102,892	99,343	--	2,191	1,358	97,574	96,357	--	1,217	--
Oak-pine	190,949	103,416	11,910	34,357	41,266	161,734	102,792	11,483	29,459	18,000
Oak-hickory	312,910	25,693	741	37,923	248,553	185,723	25,002	741	33,403	126,577
Oak-gum-cypress	2,120,189	30,755	941,715	663,685	484,034	1,835,536	30,334	925,290	556,392	323,520
Elm-ash-cottonwood	72,662	--	1,563	31,562	39,537	56,500	--	1,563	25,714	29,223
Maple-beech-birch	--	--	--	--	--	--	--	--	--	--
All types	3,270,665	697,440	956,834	777,260	839,131	2,785,818	690,023	939,982	652,978	502,835

Table 22.--Area of timberland treated or disturbed annually and retained in timberland, by treatment or disturbance and ownership class, Central Florida, 1980 to 1988

Treatment or disturbance	All ownerships	Ownership class			
		Public	Forest industry	Forest industry-leased	Other private
			Acres[a]		
Final harvest	13,137	2,565	--	606	9,966
Partial harvest[b]	6,517	800	527	303	4,887
Commercial thinning	834	834	--	--	--
Other stand improvement	820	--	--	--	820
Site preparation	3,284	1,933	--	303	1,048
Artificial regeneration[c]	3,744	1,298	--	--	2,446
Natural regeneration[c]	7,212	1,721	--	--	5,491
Other treatment	3,578	758	--	--	2,820
Natural disturbance	20,815	4,466	--	--	16,349

[a]Since some acres experience more than one treatment or disturbance, there are no column totals.

[b]Includes high grading and some selective cutting.

[c]Includes establishment of trees for timber production on forest and nonforest land.

Table 23.--Area of timberland treated or disturbed annually and retained in timberland, by treatment or disturbance and broad management class, Central Florida, 1980 to 1988

Treatment or disturbance	All classes	Broad management class[a]				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
				Acres[b]		
Final harvest	13,137	928	6,596	2,242	--	3,371
Partial harvest[c]	6,517	--	740	--	--	5,777
Commercial thinning	834	834	--	--	--	--
Other stand improvement	820	--	464	--	356	--
Site preparation	3,284	279	2,252	289	464	--
Other treatment	3,578	--	358	--	1,054	2,166
Natural disturbance	20,815	1,928	7,905	75	2,076	8,831

[a]Classification before treatment or disturbance.

[b]Since some acres experience more than one treatment or disturbance, there are no column totals.

[c]Includes high grading and some selective cutting.

Table 24.--Area of timberland regenerated annually, by type of regeneration and broad management class, Central Florida, 1980 to 1988

Type of regeneration	All classes	Broad management class[a]				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
	Acres					
Artificial regeneration following harvest	925	646	--	279	--	--
Natural regeneration following harvest	1,137	--	848	--	--	289
Other artificial regeneration on forest land	668	668	--	--	--	--
Other natural regeneration on forest land	3,775	--	1,316	805	464	1,190
Artificial regeneration on nonforest land	2,151	2,151	--	--	--	--
Natural reversion of nonforest land	2,300	--	1,956	344	--	--
Total	10,956	3,465	4,120	1,428	464	1,479

[a]Classification after regeneration.

Table 25.--Area of timberland, by treatment opportunity and broad management classes, Central Florida, 1988

Treatment opportunity class	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
	Acres					
Salvage	10,178	--	3,530	3,119	--	3,529
Harvest	124,894	--	9,689	6,868	23,416	84,921
Commercial thinning	32,460	19,935	4,924	--	--	7,601
Other stand improvement	78,682	12,332	21,762	8,100	7,364	29,124
Stand conversion	7,119	--	--	2,097	2,631	2,391
Regeneration	1,083,696	10,601	285,735	90,389	381,207	315,764
Stands in relatively good condition	699,690	103,681	227,943	48,566	43,497	276,003
Adverse sites[a]	278,621	--	--	9,314	--	269,307
All classes	2,315,340	146,549	553,583	168,453	458,115	988,640

[a]Areas where management opportunities are severely limited because of steep slopes or poor drainage.

Table 26.--Area of timberland, by treatment opportunity and ownership classes, Central Florida, 1988

Treatment opportunity class	All ownerships	Ownership class			
		Public	Forest industry	Forest industry-leased	Other private
	Acres				
Salvage	10,178	3,119	--	--	7,059
Harvest	124,894	20,088	4,109	--	100,697
Commercial thinning	32,460	1,960	--	--	30,500
Other stand improvement	78,682	18,269	4,413	1,336	54,664
Stand conversion	7,119	2,097	--	--	5,022
Regeneration	1,083,696	195,050	11,264	4,607	872,775
Stands in relatively good condition	699,690	178,485	22,713	10,918	487,574
Adverse sites[a]	278,621	44,829	--	--	233,792
All classes	2,315,340	463,897	42,499	16,861	1,792,083

[a]Areas where management opportunities are severely limited because of steep slopes or poor drainage.

Table 27.--Merchantable volume of live trees and growing stock on timberland, by ownership class and species group, Central Florida, 1988

Ownership class	Live trees					Growing stock				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet									
National forest	54,109	30,613	--	11,001	12,495	47,678	30,316	--	10,308	7,054
Other public	578,721	112,460	183,755	142,653	139,853	511,797	111,721	180,931	126,382	92,763
Forest industry	48,913	10,682	21,702	7,075	9,454	47,460	10,682	21,702	7,075	8,001
Forest industry-leased	22,820	15,078	2,687	2,915	2,140	22,134	15,078	2,687	2,915	1,454
Other private	2,566,102	528,607	748,690	613,616	675,189	2,156,749	522,226	734,662	506,298	393,563
All ownerships	3,270,665	697,440	956,834	777,260	839,131	2,785,818	690,023	939,982	652,978	502,835

Table 28.--Volume of sawtimber on timberland, by ownership class and species group, Central Florida, 1988

Ownership class	Small sawtimber[a]					Large sawtimber[b]				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand board feet									
National forest	81,306	62,003	--	12,450	6,853	77,545	47,681	--	17,652	12,212
Other public	843,757	287,999	318,376	163,216	74,166	813,699	111,154	289,644	187,031	225,870
Forest industry	73,202	20,942	40,253	3,692	8,315	46,765	5,093	17,273	13,475	10,924
Forest industry-leased	11,240	6,447	3,191	1,602	--	17,411	--	--	10,502	6,909
Other private	3,479,052	1,238,946	1,372,353	545,473	322,280	3,454,179	748,679	752,094	854,375	1,099,031
All ownerships	4,488,557	1,616,337	1,734,173	726,433	411,614	4,409,599	912,607	1,059,011	1,083,035	1,354,946

[a]Volume of sawtimber trees less than 15.0 inches at d.b.h.

[b]Volume of sawtimber trees 15.0 inches and larger at d.b.h.

Table 29.--Average net annual growth and removals of growing stock on timberland, by ownership class and species group, Central Florida, 1980-1987

Ownership class	Net annual growth					Annual timber removals				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet									
National forest	2,627	2,146	--	329	152	493	493	--	--	--
Other public	17,463	6,608	4,284	3,470	3,101	4,992	4,392	259	237	104
Forest industry	1,575	501	710	151	213	773	--	773	--	--
Forest industry-leased	1,987	1,786	68	92	41	2,592	714	1,878	--	--
Other private	72,084	25,600	20,931	15,113	10,440	34,654	16,655	13,088	3,349	1,562
All ownerships	95,736	36,641	25,993	19,155	13,947	43,504	22,254	15,998	3,586	1,666

Table 30.--Average net annual growth and removals of sawtimber on timberland, by ownership class and species group, Central Florida, 1980-1987

Ownership class	Net annual growth					Annual timber removals				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand board feet									
National forest	5,230	3,269	--	1,187	774	1,692	1,692	--	--	--
Other public	61,928	20,364	19,948	10,569	11,047	16,020	13,606	888	1,115	411
Forest industry	8,885	2,504	4,350	512	1,519	2,719	--	2,719	--	--
Forest industry-leased	3,315	2,713	232	242	128	6,263	989	5,274	--	--
Other private	319,494	125,038	93,882	58,942	41,632	125,817	70,296	42,279	8,533	4,709
All ownerships	398,852	153,888	118,412	71,452	55,100	152,511	86,583	51,160	9,648	5,120

Table 31.--Volume of timber on timberland, by class of timber and species group, Central Florida, 1988

Class of timber	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
			Thousand cubic feet		
Sawtimber trees					
Saw-log portion	1,718,679	464,115	580,053	351,065	323,446
Upper-stem portion[a]	253,180	43,634	91,249	70,413	47,884
Total	1,971,859	507,749	671,302	421,478	371,330
Poletimber trees	813,959	182,274	268,680	231,500	131,505
All growing-stock trees	2,785,818	690,023	939,982	652,978	502,835
Rough trees					
Sawtimber size	255,828	5,186	5,045	53,617	191,980
Poletimber size	189,743	1,553	8,832	59,184	120,174
Total	445,571	6,739	13,877	112,801	312,154
Rotten trees					
Sawtimber size	34,201	678	2,746	8,967	21,810
Poletimber size	5,075	--	229	2,514	2,332
Total	39,276	678	2,975	11,481	24,142
Salvable dead trees					
Sawtimber size	4,359	1,608	451	1,395	905
Poletimber size	2,954	969	562	968	455
Total	7,313	2,577	1,013	2,363	1,360
Total, all timber	3,277,978	700,017	957,847	779,623	840,491

[a]Includes cull sections in the saw-log portion.

Table 32.--Number of live trees on timberland, by species and diameter class, Central Florida, 1988

Species	All classes	Diameter class (inches at breast height)											
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Thousand trees												
Softwood													
Longleaf pine	21,637	8,110	3,415	2,137	2,137	2,047	1,900	1,024	498	273	79	14	3
Slash pine	95,993	26,561	21,563	19,086	13,001	6,858	4,412	2,313	1,325	623	147	104	--
Shortleaf pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Loblolly pine	2,141	--	697	480	295	344	75	108	89	22	18	13	--
Pond pine	8,082	1,144	2,134	1,776	1,453	669	437	220	116	64	51	18	--
Virginia pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Pitch pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	41,545	23,851	9,887	3,610	1,611	995	956	316	229	45	45	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	22,559	4,070	3,047	3,413	2,966	3,257	1,839	1,440	873	662	409	474	109
Pondcypress	194,171	70,533	45,935	32,255	20,084	13,870	7,089	2,818	992	365	131	85	14
Cedars	1,630	486	157	169	191	330	48	139	60	32	10	8	--
Total softwoods	387,758	134,755	86,835	62,926	41,738	28,370	16,756	8,378	4,182	2,086	890	716	126
Hardwood													
Select white oaks	18	--	--	--	--	--	--	--	--	10	--	8	--
Select red oaks	--	--	--	--	--	--	--	--	--	--	--	--	--
Chestnut oak	--	--	--	--	--	--	--	--	--	--	--	--	--
Other white oaks	107,346	63,861	23,116	6,924	3,895	2,554	1,836	1,247	878	894	605	1,145	391
Other red oaks	91,110	52,311	15,993	8,719	4,772	3,198	1,942	1,516	872	510	445	692	140
Hickory	7,186	4,975	865	144	319	308	178	70	163	81	50	33	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--	--	--
Hard maple	1,422	755	196	237	60	32	31	20	36	13	10	32	--
Soft maple	51,796	20,489	12,208	5,591	4,244	3,582	2,095	1,483	943	645	198	299	19
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--
Sweetgum	19,708	8,588	4,310	1,568	1,576	1,635	893	501	246	182	110	95	4
Tupelo and blackgum	43,804	17,111	10,398	5,652	3,499	2,593	2,135	1,044	506	324	207	322	13
Ash	71,300	34,504	15,810	9,593	4,772	2,857	1,811	780	563	388	144	69	9
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	216	--	--	--	67	--	65	47	16	12	9	--	--
Yellow-poplar	--	--	--	--	--	--	--	--	--	--	--	--	--
Bay and magnolia	104,523	56,889	23,493	11,424	5,294	3,922	1,758	836	401	198	177	122	9
Black cherry	2,376	982	834	490	58	--	--	--	--	12	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--	--	--
Black locust	--	--	--	--	--	--	--	--	--	--	--	--	--
Elm	15,555	7,886	3,467	1,657	827	817	297	209	209	86	59	37	4
Other eastern hardwoods	167,179	124,108	26,820	9,162	4,076	1,903	482	448	103	61	--	16	--
Total hardwoods	683,539	392,459	137,510	61,161	33,459	23,401	13,523	8,201	4,936	3,416	2,014	2,870	589
All species	1,071,297	527,214	224,345	124,087	75,197	51,771	30,279	16,579	9,118	5,502	2,904	3,586	715

Table 33.--Number of growing-stock trees on timberland, by species and diameter class, Central Florida, 1988

Species	All classes	Diameter class (inches at breast height)											
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Thousand trees												
Softwood													
Longleaf pine	21,537	8,110	3,415	2,137	2,073	2,047	1,875	1,024	498	262	79	14	3
Slash pine	93,774	24,950	21,226	19,086	12,929	6,680	4,412	2,313	1,311	623	147	97	--
Shortleaf pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Loblolly pine	2,091	--	697	480	295	294	75	108	89	22	18	13	--
Pond pine	7,669	983	1,973	1,776	1,453	599	416	220	116	64	51	18	--
Virginia pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Pitch pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	40,433	23,042	9,887	3,510	1,546	922	906	316	214	45	45	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	21,126	3,409	2,419	3,413	2,918	3,257	1,839	1,420	858	636	409	442	106
Pondcypress	180,707	62,432	43,037	30,772	19,483	13,709	6,952	2,758	978	365	131	77	13
Cedars	1,385	486	157	91	49	330	23	139	60	32	10	8	--
Total softwoods	368,722	123,412	82,811	61,265	40,746	27,838	16,498	8,298	4,124	2,049	890	669	122
Hardwood													
Select white oaks	10	--	--	--	--	--	--	--	--	10	--	--	--
Select red oaks	--	--	--	--	--	--	--	--	--	--	--	--	--
Chestnut oak	--	--	--	--	--	--	--	--	--	--	--	--	--
Other white oaks	14,191	6,539	2,930	1,512	741	517	297	230	253	267	242	457	206
Other red oaks	51,574	26,085	10,237	5,795	3,244	2,112	1,347	1,097	532	350	278	418	79
Hickory	2,243	1,022	--	144	246	272	178	54	163	81	50	33	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--	--	--
Hard maple	696	167	196	106	60	32	31	20	36	13	10	25	--
Soft maple	28,938	8,461	8,070	3,132	2,765	2,326	1,509	1,188	594	531	152	191	19
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--
Sweetgum	13,435	4,147	2,683	1,568	1,576	1,520	844	484	233	182	110	84	4
Tupelo and blackgum	30,660	8,930	7,847	4,715	2,678	2,253	1,973	988	475	324	173	291	13
Ash	29,716	10,128	6,149	5,172	3,096	2,019	1,560	604	419	354	144	62	9
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	117	--	--	--	--	--	33	47	16	12	9	--	--
Yellow-poplar	--	--	--	--	--	--	--	--	--	--	--	--	--
Bay and magnolia	52,593	21,765	12,047	8,610	4,018	3,267	1,416	673	357	187	129	115	9
Black cherry	1,716	668	658	378	--	--	--	--	--	12	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--	--	--
Black locust	--	--	--	--	--	--	--	--	--	--	--	--	--
Elm	10,699	5,395	2,768	819	564	463	220	176	153	68	42	27	4
Other eastern hardwoods	3,117	1,904	292	432	70	252	87	40	13	11	--	16	--
Total hardwoods	239,705	95,211	53,877	32,383	19,058	15,033	9,495	5,601	3,244	2,402	1,339	1,719	343
All species	608,427	218,623	136,688	93,648	59,804	42,871	25,993	13,899	7,368	4,451	2,229	2,388	465

Table 34.--Merchantable volume of live trees on timberland, by species and diameter class, Central Florida, 1988

Species	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	29.0 and larger
	Thousand cubic feet										
Softwood											
Longleaf pine	130,894	5,606	12,660	22,674	30,418	25,384	16,735	11,215	4,636	996	570
Slash pine	433,037	49,522	79,488	76,411	77,862	61,497	45,197	26,696	8,972	7,392	--
Shortleaf pine	--	--	--	--	--	--	--	--	--	--	--
Loblolly pine	18,436	1,023	1,663	3,387	1,654	3,496	3,603	1,212	1,240	1,158	--
Pond pine	42,808	4,017	7,678	6,674	7,282	4,990	4,047	3,309	3,124	1,687	--
Virginia pine	--	--	--	--	--	--	--	--	--	--	--
Pitch pine	--	--	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--
Sand pine	72,265	11,284	10,886	11,737	17,299	8,767	7,889	1,796	2,607	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	269,184	10,211	19,513	38,762	31,445	35,482	29,377	28,720	22,588	36,153	16,933
Pondcypress	674,553	105,799	140,738	167,428	127,748	69,706	32,278	16,215	6,824	5,733	2,084
Cedars	13,097	560	920	3,125	824	3,074	1,745	1,724	537	588	--
Total softwoods	1,654,274	188,022	273,546	330,198	294,532	212,396	140,871	90,887	50,528	53,707	19,587
Hardwood											
Select white oaks	704	--	--	--	--	--	--	582	--	122	--
Select red oaks	--	--	--	--	--	--	--	--	--	--	--
Chestnut oak	--	--	--	--	--	--	--	--	--	--	--
Other white oaks	296,427	15,663	15,282	18,487	20,169	21,101	20,442	27,671	24,272	72,565	60,775
Other red oaks	268,562	21,715	26,312	29,126	28,544	31,868	23,901	18,445	20,848	50,334	17,469
Hickory	26,794	187	1,758	3,009	3,077	1,535	6,414	4,031	3,678	3,105	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	6,455	508	249	270	584	429	1,228	431	529	2,227	--
Soft maple	242,275	17,203	24,722	35,767	36,216	36,069	28,618	27,215	10,762	22,881	2,822
Beech	--	--	--	--	--	--	--	--	--	--	--
Sweetgum	96,851	4,284	10,092	17,706	18,092	13,936	8,673	8,966	6,827	7,606	669
Tupelo and blackgum	195,290	15,852	21,597	27,704	35,793	25,557	16,705	14,232	10,323	25,055	2,472
Ash	185,941	22,563	26,934	30,765	33,915	19,665	17,644	18,439	8,853	6,023	1,140
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Basswood	3,240	--	259	--	822	780	551	333	495	--	--
Yellow-poplar	--	--	--	--	--	--	--	--	--	--	--
Bay and magnolia	185,750	29,895	28,166	39,062	28,271	20,010	13,210	8,732	9,174	7,993	1,237
Black cherry	1,616	992	259	--	--	--	--	365	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--
Black locust	--	--	--	--	--	--	--	--	--	--	--
Elm	43,206	3,302	3,975	7,918	4,521	5,209	7,139	4,048	3,215	3,136	743
Other eastern hardwoods	63,280	16,034	16,314	13,278	6,006	6,817	2,081	1,828	--	922	--
Total hardwoods	1,616,391	148,198	175,919	223,092	216,010	182,976	146,606	135,318	98,976	201,969	87,327
All species	3,270,665	336,220	449,465	553,290	510,542	395,372	287,477	226,205	149,504	255,676	106,914

Table 35.--Volume of growing stock on timberland, by species and diameter class, Central Florida, 1988

Species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	29.0 and larger
	Thousand cubic feet										
Softwood											
Longleaf pine	130,013	5,606	12,352	22,674	30,161	25,384	16,735	10,899	4,636	996	570
Slash pine	430,342	49,522	78,962	74,898	77,862	61,497	44,960	26,696	8,972	6,973	--
Shortleaf pine	--	--	--	--	--	--	--	--	--	--	--
Loblolly pine	18,015	1,023	1,663	2,966	1,654	3,496	3,603	1,212	1,240	1,158	--
Pond pine	41,889	4,017	7,678	5,969	7,068	4,990	4,047	3,309	3,124	1,687	--
Virginia pine	--	--	--	--	--	--	--	--	--	--	--
Pitch pine	--	--	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--
Sand pine	69,764	10,862	10,589	11,169	16,546	8,767	7,428	1,796	2,607	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	266,108	10,211	19,260	38,762	31,445	35,224	28,928	27,999	22,588	34,857	16,834
Pondcypress	661,998	101,208	137,261	165,968	126,212	68,933	31,997	16,215	6,824	5,346	2,034
Cedars	11,876	330	410	3,125	343	3,074	1,745	1,724	537	588	--
Total softwoods	1,630,005	182,779	268,175	325,531	291,291	211,365	139,443	89,850	50,528	51,605	19,438
Hardwood											
Select white oaks	582	--	--	--	--	--	--	582	--	--	--
Select red oaks	--	--	--	--	--	--	--	--	--	--	--
Chestnut oak	--	--	--	--	--	--	--	--	--	--	--
Other white oaks	118,598	3,821	3,512	4,187	4,173	4,516	6,990	9,952	11,396	34,812	35,239
Other red oaks	194,704	15,043	19,462	20,922	21,242	25,207	17,051	14,285	14,906	35,013	11,573
Hickory	26,014	187	1,539	2,743	3,077	1,240	6,414	4,031	3,678	3,105	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	6,158	280	249	270	584	429	1,228	431	529	2,158	--
Soft maple	182,006	10,132	17,777	24,699	27,546	29,874	20,293	23,815	8,514	16,534	2,822
Beech	--	--	--	--	--	--	--	--	--	--	--
Sweetgum	94,071	4,284	10,092	17,078	17,221	13,667	8,335	8,966	6,827	6,932	669
Tupelo and blackgum	178,864	13,628	17,193	24,912	33,699	24,645	15,707	14,232	8,883	23,493	2,472
Ash	153,346	12,938	20,537	23,622	30,831	17,288	15,156	17,180	8,853	5,801	1,140
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Basswood	2,772	--	--	--	613	780	551	333	495	--	--
Yellow-poplar	--	--	--	--	--	--	--	--	--	--	--
Bay and magnolia	157,560	22,754	22,331	34,633	23,736	17,045	12,065	8,385	7,498	7,876	1,237
Black cherry	1,124	759	--	--	--	--	--	365	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--
Black locust	--	--	--	--	--	--	--	--	--	--	--
Elm	31,890	1,540	3,013	4,912	3,754	4,697	5,441	3,366	2,245	2,179	743
Other eastern hardwoods	8,124	1,064	416	2,476	1,461	881	312	592	--	922	--
Total hardwoods	1,155,813	86,430	116,121	160,454	167,937	140,269	109,543	106,515	73,824	138,825	55,895
All species	2,785,818	269,209	384,296	485,985	459,228	351,634	248,986	196,365	124,352	190,430	75,333

Table 36.--Volume of sawtimber on timberland, by species and diameter class, Central Florida, 1988

Species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Thousand board feet								
Softwood									
Longleaf pine	575,490	92,592	143,934	136,061	96,356	66,391	29,339	6,713	4,104
Slash pine	1,482,127	276,996	357,660	323,599	256,823	162,763	57,668	46,618	--
Shortleaf pine	--	--	--	--	--	--	--	--	--
Loblolly pine	79,175	9,918	7,511	18,449	20,403	7,215	7,890	7,789	--
Pond pine	152,840	22,685	32,123	25,488	22,666	19,539	19,341	10,998	--
Virginia pine	--	--	--	--	--	--	--	--	--
Pitch pine	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--
Sand pine	239,312	44,441	78,155	46,725	42,600	10,858	16,533	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--
Baldcypress	1,103,099	116,110	120,115	154,365	138,265	143,449	121,868	202,244	106,683
Pondcypress	1,632,722	517,857	489,540	305,896	155,023	83,652	37,030	30,767	12,957
Cedars	57,363	12,533	1,705	16,052	9,804	10,331	3,268	3,670	--
Total softwoods	5,322,128	1,093,132	1,230,743	1,026,635	741,940	504,198	292,937	308,799	123,744
Hardwood									
Select white oaks	3,105	--	--	--	--	3,105	--	--	--
Select red oaks	--	--	--	--	--	--	--	--	--
Chestnut oak	--	--	--	--	--	--	--	--	--
Other white oaks	537,576	--	14,716	17,741	29,794	45,042	54,246	178,486	197,551
Other red oaks	698,053	--	80,536	109,164	81,805	72,655	79,533	202,205	72,155
Hickory	100,644	--	10,695	4,877	29,170	19,675	18,922	17,305	--
Yellow birch	--	--	--	--	--	--	--	--	--
Hard maple	24,417	--	1,899	1,660	5,262	1,952	2,594	11,050	--
Soft maple	541,111	--	91,517	114,280	85,610	107,751	40,922	85,252	15,779
Beech	--	--	--	--	--	--	--	--	--
Sweetgum	289,362	--	62,061	58,661	39,236	46,655	37,987	40,370	4,392
Tupelo and blackgum	542,784	--	112,798	99,120	70,206	68,397	45,649	131,437	15,177
Ash	397,334	--	99,838	68,624	65,906	80,635	43,976	31,644	6,711
Cottonwood	--	--	--	--	--	--	--	--	--
Basswood	11,278	--	2,040	2,937	2,321	1,522	2,458	--	--
Yellow-poplar	--	--	--	--	--	--	--	--	--
Bay and magnolia	315,506	--	79,014	66,107	50,996	37,661	35,560	39,392	6,776
Black cherry	1,781	--	--	--	--	1,781	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--
Black locust	--	--	--	--	--	--	--	--	--
Elm	95,502	--	12,799	18,444	23,200	15,281	10,681	11,004	4,093
Other eastern hardwoods	17,575	--	4,905	3,614	1,282	2,982	--	4,792	--
Total hardwoods	3,576,028	--	572,818	565,229	484,788	505,094	372,528	752,937	322,634
All species	8,898,156	1,093,132	1,803,561	1,591,864	1,226,728	1,009,292	665,465	1,061,736	446,378

Table 37.--Volume of sawtimber on timberland, by species, size class, and tree grade, Central Florida, 1988

Species	All size classes					Trees 15.0 inches d.b.h. and larger				
	All grades	Tree grade				All grades	Tree grade			
		1	2	3	4		1	2	3	4
	Thousand board feet									
Softwood										
Yellow pines[a]	2,528,944	745,893	574,137	1,208,914	--	912,607	381,555	236,425	294,627	--
Eastern white pine[b]	--	--	--	--	--	--	--	--	--	--
Spruce and fir[b]	--	--	--	--	--	--	--	--	--	--
Cypress[c]	2,735,821	567,127	669,312	1,475,705	23,677	1,031,938	567,127	344,079	111,026	9,706
Other eastern softwoods[b]	57,363	3,936	13,354	40,073	--	27,073	3,936	8,390	14,747	--
Total	5,322,128	1,316,956	1,256,803	2,724,692	23,677	1,971,618	952,618	588,894	420,400	9,706
Hardwood[c]										
Select white and red oaks	3,105	--	--	3,105	--	3,105	--	--	3,105	--
Other white and red oaks	1,235,629	273,406	366,592	475,869	119,762	1,013,472	273,406	340,697	313,763	85,606
Hickory	100,644	31,745	46,576	22,323	--	85,072	31,745	46,576	6,751	--
Yellow birch	--	--	--	--	--	--	--	--	--	--
Hard maple	24,417	--	3,116	8,717	12,584	20,858	--	3,116	8,717	9,025
Sweetgum	289,362	89,164	89,433	100,148	10,617	168,640	89,164	50,123	25,217	4,136
Ash, walnut, and black cherry	399,115	73,825	116,689	196,633	11,968	230,653	73,825	74,570	82,258	--
Yellow-poplar	--	--	--	--	--	--	--	--	--	--
Other eastern hardwoods	1,523,756	274,496	446,427	711,648	91,185	916,181	274,496	307,608	281,849	52,228
Total	3,576,028	742,636	1,068,833	1,518,443	246,116	2,437,981	742,636	822,690	721,660	150,995
All species	8,898,156	2,059,592	2,325,636	4,243,135	269,793	4,409,599	1,695,254	1,411,584	1,142,060	160,701

[a]For yellow pines, tree grade is based on "Southern Pine Tree Grades for Yard and Structural Lumber," Research Paper SE-40, published by the Southeastern Forest Experiment Station, Asheville, NC, 1968. Tree grade 4 does not apply to yellow pine.

[b]For other softwoods (excluding cypress), tree grade is based on "Tree Grades for Eastern White Pine," Research Paper NE-214, published by the Northeastern Forest Experiment Station, Broomall, PA, 1971.

[c]For hardwoods and cypress, tree grades 1, 2, and 3 are based on "Hardwood Tree Grades for Factory Lumber," Research Paper NE-333, published by the Northeastern Forest Experiment Station, Broomall, PA, 1976. Grade 4 trees are sawtimber trees not qualifying as tree Grades 1, 2, or 3. The butt log of these trees qualify as construction (tie and timber) logs based on "A Guide to Hardwood Log Grading (revised)," General Technical Report NE-1, published by the Northeastern Forest Experiment Station, Broomall, PA, 1971.

Table 38.--Cubic volume in the merchantable saw-log portion of sawtimber trees on timberland, by species and diameter class, Central Florida, 1988

Species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Thousand cubic feet								
Softwood									
Longleaf pine	103,500	18,816	27,495	24,155	16,224	10,686	4,573	987	564
Slash pine	274,481	59,585	70,551	58,530	43,718	26,309	8,884	6,904	--
Shortleaf pine	--	--	--	--	--	--	--	--	--
Loblolly pine	14,048	2,166	1,492	3,330	3,496	1,190	1,228	1,146	--
Pond pine	28,046	4,875	6,444	4,751	3,949	3,264	3,093	1,670	--
Virginia pine	--	--	--	--	--	--	--	--	--
Pitch pine	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--
Sand pine	44,040	9,189	15,031	8,317	7,180	1,755	2,568	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--
Baldcypress	209,845	27,536	26,583	31,613	26,682	26,280	21,421	33,427	16,303
Pondcypress	360,115	127,277	110,339	63,302	30,061	15,435	6,546	5,170	1,985
Cedars	10,093	2,489	315	2,871	1,663	1,664	520	571	--
Total softwoods	1,044,168	251,933	258,250	196,869	132,973	86,583	48,833	49,875	18,852
Hardwood									
Select white oaks	545	--	--	--	--	545	--	--	--
Select red oaks	--	--	--	--	--	--	--	--	--
Chestnut oak	--	--	--	--	--	--	--	--	--
Other white oaks	97,779	--	3,149	3,728	6,065	8,881	10,362	32,318	33,276
Other red oaks	121,176	--	15,577	20,705	14,875	12,794	13,593	32,667	10,965
Hickory	18,802	--	2,240	1,000	5,621	3,640	3,382	2,919	--
Yellow birch	--	--	--	--	--	--	--	--	--
Hard maple	4,679	--	383	345	1,062	384	488	2,017	--
Soft maple	106,668	--	19,200	23,783	17,225	20,932	7,668	15,213	2,647
Beech	--	--	--	--	--	--	--	--	--
Sweetgum	52,886	--	12,193	11,314	7,319	8,270	6,466	6,662	662
Tupelo and blackgum	103,300	--	23,955	20,257	13,671	12,781	8,168	22,098	2,370
Ash	79,366	--	21,392	14,326	13,249	15,568	8,202	5,524	1,105
Cottonwood	--	--	--	--	--	--	--	--	--
Basswood	2,287	--	433	621	475	299	459	--	--
Yellow-poplar	--	--	--	--	--	--	--	--	--
Bay and magnolia	64,839	--	16,522	14,120	10,651	7,700	7,055	7,566	1,225
Black cherry	326	--	--	--	--	326	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--
Black locust	--	--	--	--	--	--	--	--	--
Elm	18,640	--	2,633	3,771	4,614	2,947	2,003	1,983	689
Other eastern hardwoods	3,218	--	933	714	271	486	--	814	--
Total hardwoods	674,511	--	118,610	114,684	95,098	95,553	67,846	129,781	52,939
All species	1,718,679	251,933	376,860	311,553	228,071	182,136	116,679	179,656	71,791

Table 39.--Total volume of live trees on timberland, by species and diameter class, Central Florida, 1988

Species	All classes	Diameter class (inches at breast height)											
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Thousand cubic feet												
Softwood													
Longleaf pine	156,879	1,787	4,160	7,879	15,310	26,214	34,649	28,620	18,778	12,566	5,174	1,109	633
Slash pine	540,821	6,870	24,887	68,463	96,074	88,355	88,421	69,177	50,590	29,785	9,987	8,212	--
Shortleaf pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Loblolly pine	22,478	--	965	1,485	2,067	4,010	1,890	3,957	4,059	1,362	1,389	1,294	--
Pond pine	52,080	241	1,602	5,357	9,235	7,778	8,374	5,699	4,601	3,752	3,536	1,905	--
Virginia pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Pitch pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	105,446	5,866	12,341	16,391	13,440	13,739	19,855	9,956	8,910	2,022	2,926	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	336,320	1,478	4,852	14,926	25,179	48,054	38,309	42,942	35,346	34,514	27,079	43,332	20,309
Pondcypress	1,018,100	23,888	70,646	175,743	195,558	220,082	164,145	88,563	40,723	20,337	8,555	7,204	2,656
Cedars	16,311	127	229	770	1,186	3,859	994	3,688	2,080	2,045	637	696	--
Total softwoods	2,248,435	40,257	119,682	291,014	358,049	412,091	356,637	252,602	165,087	106,383	59,283	63,752	23,598
Hardwood													
Select white oaks	980	--	--	--	--	--	--	--	--	723	--	257	--
Select red oaks	--	--	--	--	--	--	--	--	--	--	--	--	--
Chestnut oak	--	--	--	--	--	--	--	--	--	--	--	--	--
Other white oaks	410,055	13,049	22,481	27,244	21,259	23,872	25,348	26,042	25,104	33,899	29,631	88,188	73,938
Other red oaks	379,919	10,955	20,552	33,590	35,240	37,630	36,367	40,183	30,129	23,150	26,310	63,526	22,287
Hickory	34,458	903	730	367	2,289	3,789	3,778	1,868	7,748	4,856	4,415	3,715	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--	--	--
Hard maple	8,529	117	327	773	320	331	714	529	1,481	516	637	2,784	--
Soft maple	320,602	5,437	18,468	24,061	31,231	43,815	43,762	43,209	34,502	32,495	12,824	27,440	3,358
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--
Sweetgum	119,782	1,618	4,458	6,078	12,462	20,941	20,939	15,991	9,966	10,182	7,743	8,651	753
Tupelo and blackgum	263,686	5,650	14,614	23,825	27,843	34,419	43,673	30,985	20,114	17,073	12,423	30,116	2,951
Ash	254,185	9,757	20,508	32,272	33,228	36,392	39,394	22,790	20,479	21,085	10,082	6,900	1,298
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	3,763	--	--	--	311	--	960	898	630	392	572	--	--
Yellow-poplar	--	--	--	--	--	--	--	--	--	--	--	--	--
Bay and magnolia	276,371	13,848	30,413	43,659	35,769	47,514	33,797	23,706	15,597	10,278	10,848	9,479	1,463
Black cherry	3,663	399	1,069	1,449	318	--	--	--	--	428	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--	--	--
Black locust	--	--	--	--	--	--	--	--	--	--	--	--	--
Elm	58,368	1,856	4,003	4,911	4,971	9,619	5,395	6,149	8,432	4,739	3,756	3,674	863
Other eastern hardwoods	133,707	22,164	26,893	24,383	21,476	16,854	7,474	8,499	2,572	2,268	--	1,124	--
Total hardwoods	2,268,068	85,753	164,516	222,612	226,717	275,176	261,601	220,849	176,754	162,084	119,241	245,854	106,911
All species	4,516,503	126,010	284,198	513,626	584,766	687,267	618,238	473,451	341,841	268,467	178,524	309,606	130,509

Table 40.--Green weight of forest biomass on timberland, by species and diameter class, Central Florida, 1988

Species	All classes	Diameter class (inches at breast height)											
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Hundred thousand pounds												
Softwood													
Longleaf pine	124,913	1,409	3,534	5,591	11,870	20,687	27,820	23,055	15,137	10,224	4,169	914	503
Slash pine	423,146	5,018	23,035	50,727	73,941	68,977	69,422	54,280	39,862	23,592	7,820	6,472	--
Shortleaf pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Loblolly pine	16,241	--	556	1,078	1,492	2,959	1,364	2,882	2,963	986	1,012	949	--
Pond pine	37,405	133	918	3,884	6,782	5,659	6,056	4,152	3,324	2,640	2,508	1,349	--
Virginia pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Pitch pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand pine	73,704	4,265	10,080	10,189	9,058	9,628	13,938	6,896	6,208	1,439	2,003	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	255,035	860	3,040	7,877	15,581	32,866	28,534	33,249	27,965	27,885	22,290	37,023	17,865
Pondcypress	606,006	13,281	44,372	77,685	106,198	134,907	108,933	61,809	29,456	15,082	6,474	5,615	2,194
Cedars	11,709	79	145	584	903	2,790	718	2,652	1,516	1,399	445	478	--
Total softwoods	1,548,159	25,045	85,680	157,615	225,825	278,473	256,785	188,975	126,431	83,247	46,721	52,800	20,562
Hardwood													
Select white oaks	883	--	--	--	--	--	--	--	--	626	--	257	--
Select red oaks	--	--	--	--	--	--	--	--	--	--	--	--	--
Chestnut oak	--	--	--	--	--	--	--	--	--	--	--	--	--
Other white oaks	376,610	9,687	17,025	15,515	16,999	20,955	23,477	24,914	24,297	32,962	29,215	87,549	74,015
Other red oaks	315,581	9,796	15,576	26,873	30,303	32,268	30,640	33,911	25,642	19,566	21,806	51,519	17,681
Hickory	29,061	773	661	228	1,904	3,114	3,119	1,597	6,504	4,160	3,706	3,295	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--	--	--
Hard maple	7,678	87	271	583	309	343	591	471	1,333	501	621	2,568	--
Soft maple	238,545	4,130	13,124	17,252	24,376	33,642	32,589	32,379	25,787	23,859	9,377	19,692	2,338
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--
Sweetgum	89,222	1,070	2,995	4,096	8,991	15,593	15,419	12,078	7,564	7,890	6,100	6,816	610
Tupelo and blackgum	174,389	3,783	9,765	12,125	16,900	21,851	28,686	21,291	14,026	12,088	9,112	22,522	2,240
Ash	165,733	6,017	12,972	25,295	24,223	24,454	24,410	13,942	12,292	12,109	5,632	3,707	680
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	2,789	--	--	--	230	--	702	696	440	302	419	--	--
Yellow-poplar	--	--	--	--	--	--	--	--	--	--	--	--	--
Bay and magnolia	173,928	8,527	18,678	23,976	22,350	30,342	21,919	15,759	10,433	6,924	7,375	6,568	1,077
Black cherry	2,288	218	717	798	227	--	--	--	--	328	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--	--	--
Black locust	--	--	--	--	--	--	--	--	--	--	--	--	--
Elm	39,520	1,369	2,829	3,066	3,572	6,253	3,620	4,149	5,665	3,238	2,611	2,555	593
Other eastern hardwoods	122,506	18,781	25,703	22,086	21,058	16,556	6,347	6,933	2,294	1,786	--	962	--
Total hardwoods	1,738,733	64,238	120,316	151,893	171,442	205,371	191,519	168,120	136,277	126,339	95,974	208,010	99,234
All species	3,286,892	89,283	205,996	309,508	397,267	483,844	448,304	357,095	262,708	209,586	142,695	260,810	119,796

Table 41.--Average net annual growth and removals of live timber and growing stock on timberland, by species, Central Florida, 1980-1987

Species	Live timber[a]		Growing stock	
	Net annual growth	Annual timber removals	Net annual growth	Annual timber removals
	Thousand cubic feet			
Softwood				
Yellow pines	36,727	22,367	36,641	22,254
Eastern white pine	--	--	--	--
Spruce and fir	--	--	--	--
Cypress	25,876	16,089	25,693	15,998
Other eastern softwoods	314	--	300	--
Total softwoods	62,917	38,456	62,634	38,252
Hardwood				
Select white and red oaks	21	--	21	--
Other white and red oaks	13,704	3,597	9,655	1,175
Hickory	671	49	658	49
Yellow birch	--	--	--	--
Hard maple	196	--	187	--
Sweetgum	2,350	887	2,251	887
Ash, walnut, and black cherry	3,956	494	3,375	442
Yellow-poplar	--	--	--	--
Tupelo and blackgum	4,325	1,119	4,072	1,040
Bay and magnolia	7,085	1,250	6,168	797
Other eastern hardwoods	9,528	2,607	6,715	862
Total hardwoods	41,836	10,003	33,102	5,252
All species	104,753	48,459	95,736	43,504

[a]Merchantable portion only.

Table 42.--Average net annual growth and removals of sawtimber on timberland, by species, Central Florida, 1980-1987

Species	Net annual growth	Annual timber removals
	Thousand board feet	
Softwood		
Yellow pines	153,888	86,583
Eastern white pine	--	--
Spruce and fir	--	--
Cypress	116,593	51,160
Other eastern softwoods	1,819	--
Total softwoods	272,300	137,743
Hardwood		
Select white and red oaks	127	--
Other white and red oaks	36,689	3,343
Hickory	3,730	--
Yellow birch	--	--
Hard maple	1,159	--
Sweetgum	12,136	3,484
Ash, walnut, and black cherry	13,011	1,777
Yellow-poplar	--	--
Tupelo and blackgum	14,807	2,648
Bay and magnolia	20,784	750
Other eastern hardwoods	24,109	2,766
Total hardwoods	126,552	14,768
All species	398,852	152,511

Table 43.--Average annual removals of growing stock on timberland, by species and diameter class, Central Florida, 1980-1987

Species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
	Thousand cubic feet										
Softwood											
Yellow pines	22,254	2,485	2,687	3,460	4,913	4,137	2,407	1,160	395	610	--
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--
Cypress	15,998	1,557	2,364	3,664	2,241	2,295	1,644	642	414	1,177	--
Other eastern softwoods	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	38,252	4,042	5,051	7,124	7,154	6,432	4,051	1,802	809	1,787	--
Hardwood											
Select white and red oaks	--	--	--	--	--	--	--	--	--	--	--
Other white and red oaks	1,175	274	69	75	177	178	148	64	--	190	--
Hickory	49	49	--	--	--	--	--	--	--	--	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	--	--	--	--	--	--	--	--	--	--	--
Sweetgum	887	--	41	97	138	226	79	120	186	--	--
Ash, walnut, and black cherry	442	--	--	63	--	104	80	--	--	195	--
Yellow-poplar	--	--	--	--	--	--	--	--	--	--	--
Tupelo and blackgum	1,040	128	176	123	185	134	--	148	73	73	--
Bay and magnolia	797	228	268	95	68	67	71	--	--	--	--
Other eastern hardwoods	862	65	68	71	115	86	188	--	269	--	--
Total hardwoods	5,252	744	622	524	683	795	566	332	528	458	--
All species	43,504	4,786	5,673	7,648	7,837	7,227	4,617	2,134	1,337	2,245	--

Table 44.--Average annual mortality of live timber, growing stock, and sawtimber on timberland, by species, Central Florida, 1980-1987

Species	Live timber[a]	Growing stock	Sawtimber
	Thousand cubic feet		Thousand board feet
Softwood			
Yellow pines	7,877	7,470	22,735
Eastern white pine	--	--	--
Spruce and fir	--	--	--
Cypress	3,212	2,935	5,002
Other eastern softwoods	13	--	--
Total softwoods	11,102	10,405	27,737
Hardwood			
Select white and red oaks	132	54	307
Other white and red oaks	6,213	2,769	11,368
Hickory	183	66	--
Yellow birch	--	--	--
Hard maple	--	--	--
Sweetgum	1,110	988	4,382
Ash, walnut, and black cherry	2,472	1,464	2,839
Yellow-poplar	--	--	--
Tupelo and blackgum	2,386	2,161	6,857
Bay and magnolia	2,916	2,107	2,939
Other eastern hardwoods	7,317	2,722	6,886
Total hardwoods	22,729	12,331	35,578
All species	33,831	22,736	63,315

[a]Merchantable portion only.

Table 45.--Change in number of live trees on timberland, by species group, survey completion date, and diameter class, Central Florida

Species group and year	All classes	Diameter class (inches at breast height)							
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0 and larger
	Thousand trees								
Yellow pine									
1980	172,410	52,520	47,814	30,481	16,441	12,039	6,579	3,568	2,968
1988	169,398	59,666	37,696	27,089	18,497	10,913	7,780	3,981	3,776
Change	-3,012	+7,146	-10,118	-3,392	+2,056	-1,126	+1,201	+413	+808
Other softwood									
1980	257,978	101,625	56,423	41,413	26,752	17,271	7,487	3,791	3,216
1988	218,360	75,089	49,139	35,837	23,241	17,457	8,976	4,397	4,224
Change	-39,618	-26,536	-7,284	-5,576	-3,511	+186	+1,489	+606	+1,008
Hardwood									
1980	795,780	505,448	139,070	63,635	35,372	20,115	12,722	7,382	12,036
1988	683,539	392,459	137,510	61,161	33,459	23,401	13,523	8,201	13,825
Change	-112,241	-112,989	-1,560	-2,474	-1,913	+3,286	+801	+819	+1,789

Table 46.--Land area, by land use class, major forest type, and survey completion date, Central Florida

Land use class	Survey completion date			Change 1980-1988
	1970	1980	1988	
	Acres			
Forest land				
Timberland:				
Pine and oak-pine types	1,058,992	953,669	868,585	-85,084
Hardwood types	1,616,922	1,520,006	1,446,755	-73,251
Total	2,675,914	2,473,675	2,315,340	-158,335
Reserved timberland	23,800	65,341	15,611	-49,730
Woodland	98,837	67,286	90,310	23,024
Total forest land	2,798,551	2,606,302	2,421,261	-185,041
Nonforest land				
Cropland	1,283,251	1,239,604	1,286,140	+46,536
Pasture and range	3,781,899	3,869,187	3,707,618	-161,569
Other	2,058,135	2,201,637	2,470,266	+268,629
Total	7,123,285	7,310,428	7,464,024	+153,596
All land[a]	9,921,836	9,916,730	9,885,285	-31,445

[a]Excludes all water areas.

Table 47.--Volume[a] of sawtimber, growing stock, and live timber on timberland, by species group, survey completion date, and diameter class, Central Florida

Species group and year	All classes	Diameter class (inches at breast height)								
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0 and larger
					SAWTIMBER (in thousand board feet)					
Softwood										
1970	3,393,479	--	--	811,867	905,093	724,523	459,204	230,089	111,823	150,880
1980	4,295,495	--	--	996,335	981,568	866,167	666,884	318,554	164,680	301,307
1988	5,322,128	--	--	1,093,132	1,230,743	1,026,635	741,940	504,198	292,937	432,543
Hardwood										
1970	2,098,871	--	--	--	342,295	376,691	326,697	275,462	200,479	577,247
1980	2,723,095	--	--	--	429,184	422,609	422,905	348,694	286,097	813,606
1988	3,576,028	--	--	--	572,818	565,229	484,788	505,094	372,528	1,075,571
					GROWING STOCK (in thousand cubic feet)					
Softwood										
1970	1,213,874	170,790	239,603	250,359	220,341	155,539	89,257	42,615	19,685	25,685
1980	1,444,101	190,756	252,335	307,200	238,970	185,941	129,619	59,004	28,987	51,289
1988	1,630,005	182,779	268,175	325,531	291,291	211,365	139,443	89,850	50,528	71,043
Hardwood										
1970	759,553	69,569	88,666	106,187	109,229	101,174	78,642	60,583	41,347	104,156
1980	943,117	79,118	107,458	121,807	136,945	113,511	101,792	76,681	59,000	146,805
1988	1,115,813	86,430	116,121	160,454	167,937	140,269	109,543	106,515	73,824	194,720
					LIVE TIMBER[b] (in thousand cubic feet)					
Softwood										
1970	1,232,293	177,325	242,778	253,906	223,866	156,323	89,534	42,615	19,685	26,261
1980	1,465,367	198,024	255,766	311,282	242,859	186,882	130,039	59,004	28,987	52,524
1988	1,654,274	188,022	273,546	330,198	294,532	212,396	140,871	90,887	50,528	73,294
Hardwood										
1970	1,106,127	121,740	141,271	153,316	145,348	135,934	106,628	81,305	60,246	160,339
1980	1,373,397	138,640	171,400	175,787	182,220	152,497	138,029	102,920	85,948	225,956
1988	1,616,391	148,198	175,919	223,092	216,010	182,976	146,606	135,318	98,976	289,296

[a]To provide a basis for valid comparisons, adjustments have been made to allow for differences in volume tables and sawtimber specifications used in previous surveys.

[b]Merchantable volume.

Brown, Mark J.
Forest statistics for Central Florida, 1988. Resour. Bull. SE-99. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station; 1988. 53 pp.

Since 1980, area of timberland in Central Florida has decreased by 6 percent to 2.3 million acres. Area of nonindustrial private forest (NIPF) land has declined by 13 percent to 1.8 million acres. An average of 13,000 acres were harvested annually and retained in timberland. About 11,000 acres regenerated annually, one-third of which were planted. Average basal area increased from 60 to 69 square feet per acre. Volume of softwood growing stock increased 13 percent to 1.6 billion cubic feet, and volume of hardwood growing stock increased 23 percent to 1.2 billion cubic feet. Average net annual growth declined less than 1 percent to almost 96 million cubic feet. Annual removals were down nearly 5 percent to about 44 million cubic feet. Annual mortality was down by almost 4 percent to less than 23 million cubic feet.

KEYWORDS: Timberland, land use trends, timberland ownership, timber volume, timber growth, timber removals.

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